PIONEER®
The Art of Entertainment

Service Manual

ORDER NO.
ARP2773

STEREO RECEIVER

SX-202R

HEWZ, HE, HB, YPW

SX-102 HEWZ, HE, HB

- **Refer to the service manual ARP2556 for SX−221R and SX−121.**
- This manual is applicable to the following : SX−202R/HEWZ, HE, HB and YPW ; SX−102/HEWZ, HE and HB.

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CONTRAST OF MISCELLANEOUS PARTS

NOTES :

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

FOR SX−202R/HEWZ, HE, HB AND YPW

SX−202R/HEWZ, HE, HB, YPW and SX−221R/HEWZ have the same construction except for the following :

Mark	Symbol & Description	Part No.					Remarks
		SX−221R/ HEWZ	SX−202R/ HEWZ	SX−202R/ HE	SX−202R/ HB	SX−202R/ YPW	
◉	COMPLEX assembly	AWZ4083	AWZ4088	AWZ4088	AWZ4088	AWZ4088	*1
NSP	SP SWITCH assembly	AWZ4086	AWZ4089	AWZ4089	AWZ4089	AWZ4089	*1
NSP	VR assembly	AWZ4087	AWZ4090	AWZ4090	AWZ4090	AWZ4090	*1
⚠	AC power cord	ADG1021	ADG1049	ADG1049	ADG1118	ADG1123	
⚠	Strain relief	....	AEC−882	AEC−882	AEC−882	AEC−882	For AC power cord
NSP	Name plate	PAM1407	PAM1608	PAM1608	PAM1608	PAM1608	
	Front panel	AMB1998	AMB2147	AMB2147	AMB2147	AMB2147	
	Display panel	AAK2308	AAK2452	AAK2452	AAK2452	AAK2452	
	FL filter	AAK2309	AAK2478	AAK2478	AAK2478	AAK2478	
	Sub panel	AAP1232	AAP1379	AAP1379	AAP1379	AAP1379	
	Spacer	....	....	....	AHB1112	AHB1112	For Packing
	Button A	AAD2212	AAD2441	AAD2441	AAD2441	AAD2441	
	Rotary knob S (BASS, TREBLE)	AAB1276	AAB1352	AAB1352	AAB1352	AAB1352	
	Packing case	AHD2264	AHD2578	AHD2578	AHD2579	AHD2579	
	Operating instructions (German)	ARC1349	ARC1436	....	....	....	
	Operating instructions (English)	....	....	....	ARB1446	ARB1446	
	Operating instructions (English, French, German, Italian, Dutch, Swedish, Spanish, Portuguese)	....	....	ARE1287	....	....	

*1 : *AWZ4088, AWZ4089 and AWZ4090 are the same as those of SX−221R/HE which is shown in the service manual ARP2556 for SX−221R.*

FOR SX−102/HEWZ, HE AND HB

SX−102/HEWZ, HE, HB and SX−121/HEWZ have the same construction except for the following :

Mark	Symbol & Description	Part No.				Remarks
		SX−121/ HEWZ	SX−102/ HEWZ	SX−102/ HE	SX−102/ HB	
◉	COMPLEX assembly	AWZ4091	AWZ4091	AWZ4095	AWZ4095	∗2
◉	CONTROL assembly	AWZ4093	AWZ4093	AWZ4092	AWZ4092	∗2
NSP	SP SWITCH assembly	AWZ4094	AWZ4094	AWZ4096	AWZ4096	∗2
⚠	AC power cord	ADG1021	ADG1049	ADG1049	ADG1118	
⚠	Strain relief	....	AEC−882	AEC−882	AEC−882	For AC power cord
	Front panel	AMB1999	AMB2148	AMB2148	AMB2148	
	Display panel	AAK2310	AAK2453	AAK2453	AAK2453	
	FL filter	AAK2311	AAK2478	AAK2478	AAK2478	
	Sub panel	AAP1232	AAP1379	AAP1379	AAP1379	
NSP	Name plate	PAM1407	PAM1608	PAM1608	PAM1608	
	Rotary knob S (BASS, TREBLE)	AAB1276	AAB1352	AAB1352	AAB1352	
	Button A	AAD2212	AAD2441	AAD2441	AAD2441	
	Packing case	AHD2265	AHD2580	AHD2580	AHD2581	
	Spacer	....	....	....	AHB1112	For packing
	Operating instructions (German)	ARC1349	ARC1436	....	....	
	Operating instructions (English)	....	....	....	ARB1446	
	Operating instructions (English, French, German, Italian, Dutch, Swedish, Spanish, Portuguese)	....	....	ARE1287	....	

∗2 : AWZ4095, AWZ4092 and AWZ4096 are the same as those of SX−121/HE which is shown in the service manual ARP2556 for SX−121.

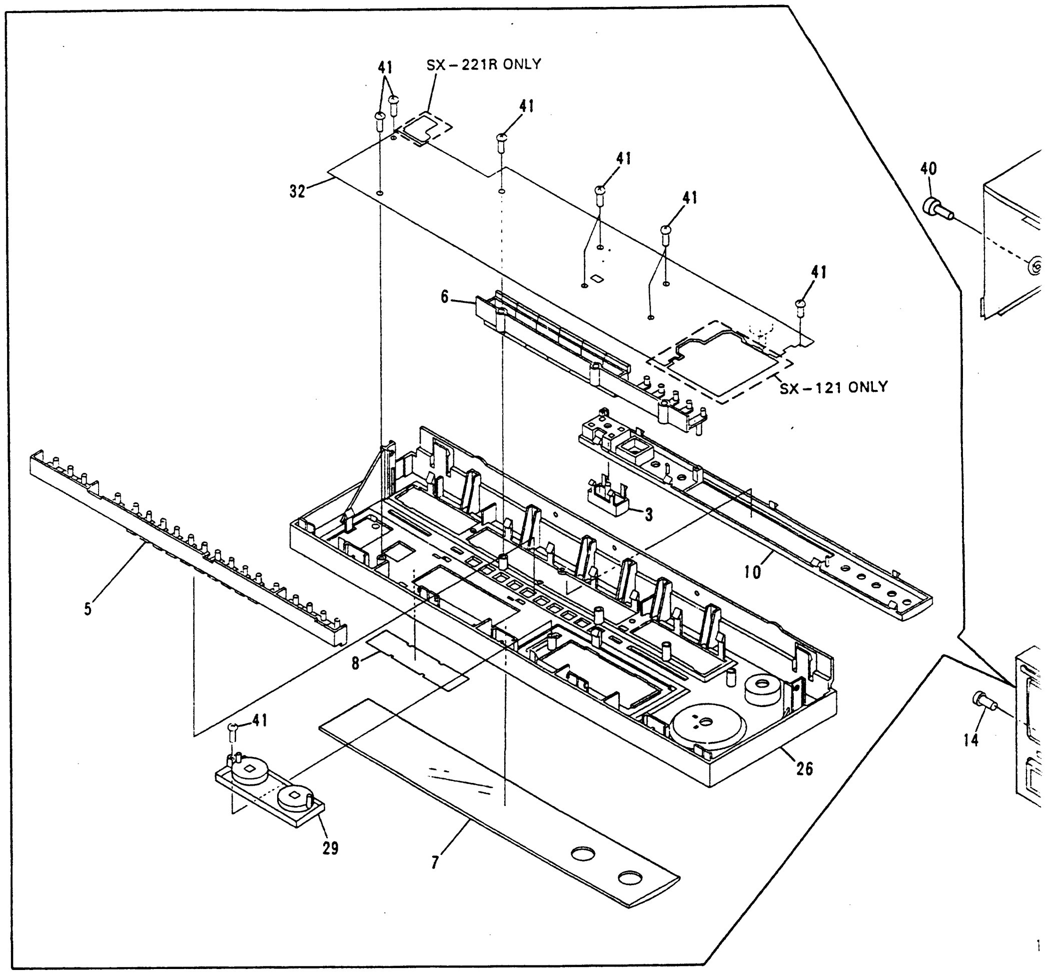
1. EXPLODED VIEWS, PACKING AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

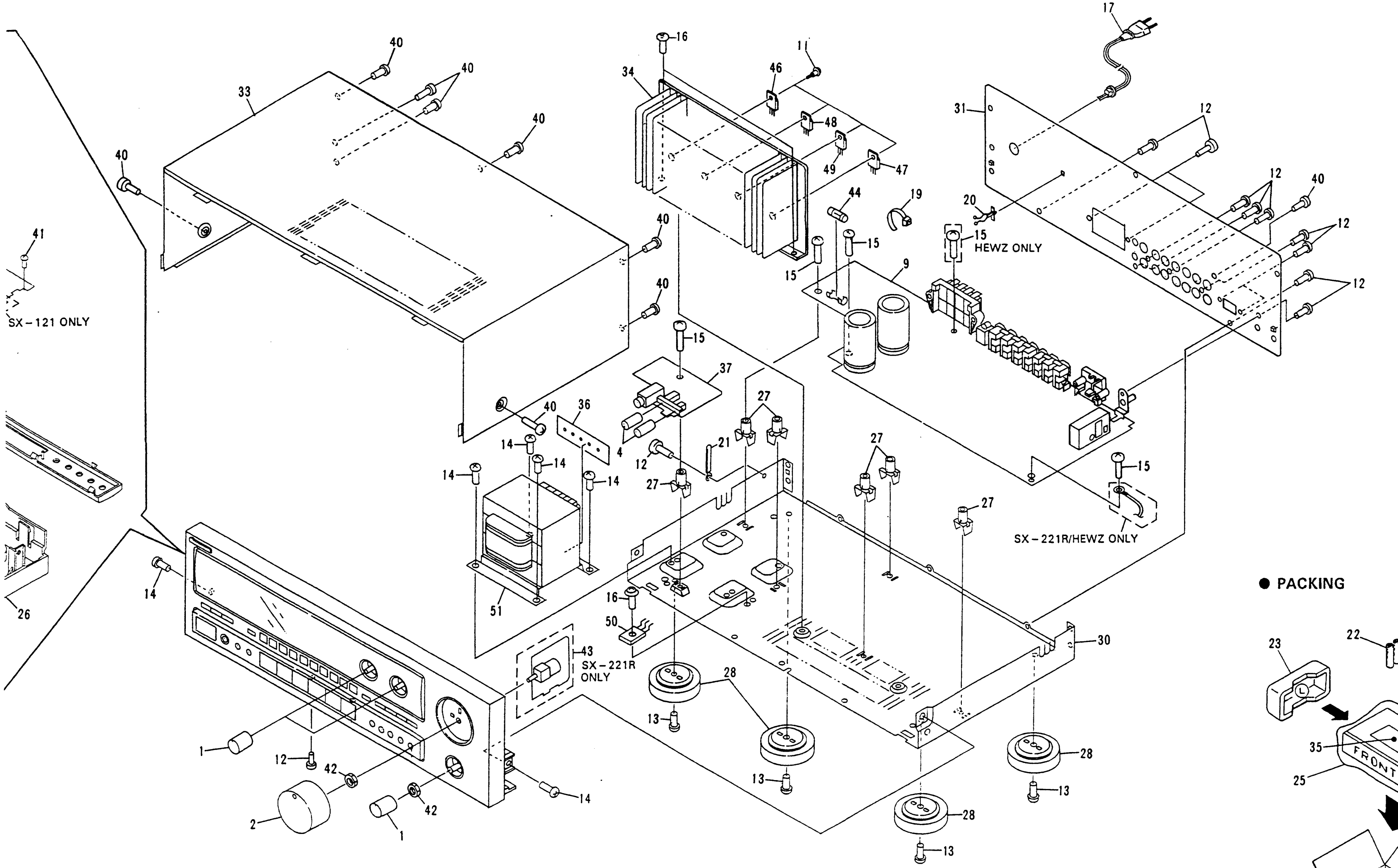
Parts list of Exterior

Mark	No.	Description	Parts No.
	1	ROTARY KNOB S (BASS, TREBLE, BALANCE)	AAB1276
	2	ROTARY KNOB L (VOLUME)	AAB1277
	3	POWER KNOB	AAD1984
	4	BUTTON (SPEAKERS)	AAD2211
	5	BUTTON A (PLS)	AAD2212
	6	BUTTON B (PLS)	AAD2213
	7	DISPLAY PANEL (For SX-221R)	AAK2308
		DISPLAY PANEL (For SX-121)	AAK2310
	8	FL FILTER (For SX-221R)	AAK2309
		FL FILTER (For SX-121)	AAK2311
◉	9	COMPLEX ASSEMBLY (For SX-221R/HEWZ)	AWZ4083
◉		COMPLEX ASSEMBLY (For SX-121/HEWZ)	AWZ4091
	10	SUB PANEL (PLS)	AAP1232
	11	SCREW (STEEL)	ABA-297
	12	SCREW	ABA-298
	13	SCREW (STEEL)	ABA1009
	14	SCREW (STEEL)	ABA1011
	15	SCREW	ABA1018
	16	SCREW	ABA1054
⚠	17	AC POWER CORD	ADG1021
	18	FM ANTENNA	ADH1002
NSP	19	NYLON BINDER	AEC-093
NSP	20	PURSE LOCK	AEC1325
NSP	21	BINDER	AEP-215
NSP	22	BATTERY (R03, AAA) (For SX-221R)	AEX-021
	23	SIDE PAD (PS)	AHA1482
	24	PACKING CASE (For SX-221R)	AHD2264
		PACKING CASE (For SX-121)	AHD2265
	25	PACKING SHEET	AHG1016
	26	FRONT PANEL (For SX-221R)	AMB1998
		FRONT PANEL (For SX-121)	AMB1999
NSP	27	PCB MOULD	AMR1525
	28	INSULATOR ASSY	AMR2140
	29	VOLUME HOLDER	AMR2408
NSP	30	CHASSIS	ANA1163
NSP	31	REAR PANEL (For SX-221R)	ANC1861
NSP		REAR PANEL (For SX-121)	ANC1860
◉	32	CONTROL ASSEMBLY (For SX-221R)	AWZ4084
◉		CONTROL ASSEMBLY (For SX-121)	AWZ4092
	33	BONNET CASE	ANE1334
NSP	34	HEAT SINK	ANH1381
	35	OPE. INSTRUCTIONS (German)	ARC1349
NSP	36	TRANS ASSEMBLY	AWZ4085
NSP	37	SP SWITCH ASSEMBLY (For SX-221R/HEWZ)	AWZ4086
NSP		SP SWITCH ASSEMBLY (For SX-121/HEWZ)	AWZ4094
	38	REMOTE CONT'L UNIT (For SX-221R)	AXD1259
	39	BATTERY COVER (For SX-221R)	AZA1297
	40	SCREW	BCZ30P080FZK
	41	SCREW	BPZ26P080FMC
	42	NUT	NK90FUC
NSP	43	VR ASSEMBLY (For SX-221R/HEWZ)	AWZ4087
⚠	44	FUSE (T1A/250V, FU1)	AEK-508
	45	LOOP ANTENNA (L)	ATB1005
⚠	46	POWER TRANSISTOR (Q1)	2SC4688
⚠	47	POWER TRANSISTOR (Q2)	2SC4688
⚠	48	POWER TRANSISTOR (Q3)	2SA1803
⚠	49	POWER TRANSISTOR (Q4)	2SA1803
⚠	50	POWER TRANSISTOR (Q5)	2SC4688
⚠	51	POWER TRANSFORMER (T1)	ATS1412

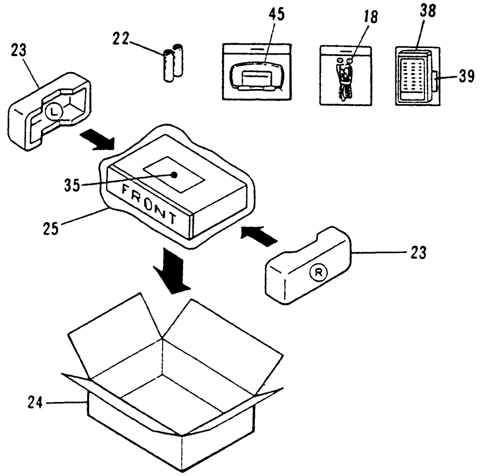
● EXTERIOR



NOTE : Screws adjacent to ▼ mark on the product are used for disassembly.


A
B
C
SX-121 ONLY
HEWZ ONLY
SX-221R ONLY
SX-221R/HEWZ ONLY

● PACKING


FRONT
L
R

2. SPECIFICATIONS

Verstärkerteil

Fortlaufende Ausgangsleistung (Zweikanalbetrieb, DIN)*	
1 kHz, T.H.D. 1 %, 4 Ω	55 W + 55 W
40 Hz — 20 kHz, T.H.D. 0,07 %, 8 Ω	45 W + 45 W
Dynamischer Leistungsausgang (Mit EIA-Testsignal)	
4/8 Ω	85/65 W
Klirrfaktor*	
40 Hz — 20 kHz, 45 W, 8 Ω	0,07 %

• *Die oben aufgeführten Daten gelten bei 230 V.*

Eingang (Empfindlichkeit/Impedanz)	
PHONO	2,5 mV/47 kΩ
CD, VCR/LD, TAPE 1/DAT, TAPE 2 MONITOR	150 mV/47 kΩ
Plattenspieler-Überlastungspegel (T.H.D. 0,08 %, 1.000 Hz)	
PHONO	130 mV
Ausgang (Pegel/Impedanz)	
TAPE REC	150 mV/2,2 kΩ
Frequenzgang	
PHONO (RIAA-Entzerrung)	20 Hz bis 20.000 Hz ±0,5 dB
CD, VCR/LD, TAPE 1/DAT, TAPE 2 MONITOR	10 Hz bis 50.000 Hz $^{+0.5}_{-3.0}$ dB
Rauschabstand (IHF, kurzgeschlossen, A Netzwerk)	
PHONO	71 dB
CD, VCR/LD, TAPE 1/DAT, TAPE 2 MONITOR	96 dB
Rauschabstand (DIN, Dauerleistung/50 mW)	
PHONO	67 dB/56 dB
CD, VCR/LD, TAPE 1/DAT, TAPE 2 MONITOR	82 dB/56 dB
Ton-Regelung	
BASS	±8 dB (100 Hz)
TREBLE	±8 dB (10 kHz)

UKW-Tunerteil

Frequenzbereich	87,5 MHz bis 108 MHz
Nutzempfindlichkeit	14,2 dBf, IHF (1,4 μV/75 Ω)
50 dB Empfindlichkeitsschwelle	
MONO	20,2 dBf (2,8 μV/75 Ω)
STEREO	41,2 dBf (31,6 μV/75 Ω)
Empfindlichkeit (DIN)	
MONO	1,4 μV/75 Ω
STEREO	32 μV/75 Ω
Rauschabstand	
MONO	75 dB (bei 85 dBf)
STEREO	71 dB (bei 85 dBf)
Rauschabstand (DIN)	
MONO	68 dB
STEREO	64 dB
Verzerrung	
STEREO	0,3 % (1 kHz)
Trennungsvermögen von dem dritten Kanal	67 dB (400 kHz)
Stereotrennung	35 dB (1 kHz)
Frequenzgang	30 Hz bis 15 kHz (± 1 dB)
Antennenausgang	75 Ω nicht balanciert

MW-Tunerteil

Frequenzbereich	531 kHz bis 1.602 kHz
Empfindlichkeit	
IHF, Rahmen-Antenne	300 μV/m
Trennungsvermögen	25 dB
Rauschabstand	53 dB
Antenne	MW-Rahmenantenne

Verschiedenes

Stromversorgung	Wechselstrom 220 — 230 Volt, 50/60 Hz
Stromverbrauch	
Modell SX-121	290 W
Modell SX-221R	290 W
Abmessungen	420 (B) x 140 (H) x 289 (T) mm
Gewicht (Ohne Verpackung)	
Modell SX-121	5,3 kg
Modell SX-221R	5,5 kg

Zubehör

T-förmige UKW-Antenne	1
MW-Rahmenantenne	1
Bedienungsanleitung	1
[Nur bei SX-221R]	
Fernbedienungsgerät	1
Trockenzelle-Batterie (Format "AAA" (IEC R03/UM-4))	2

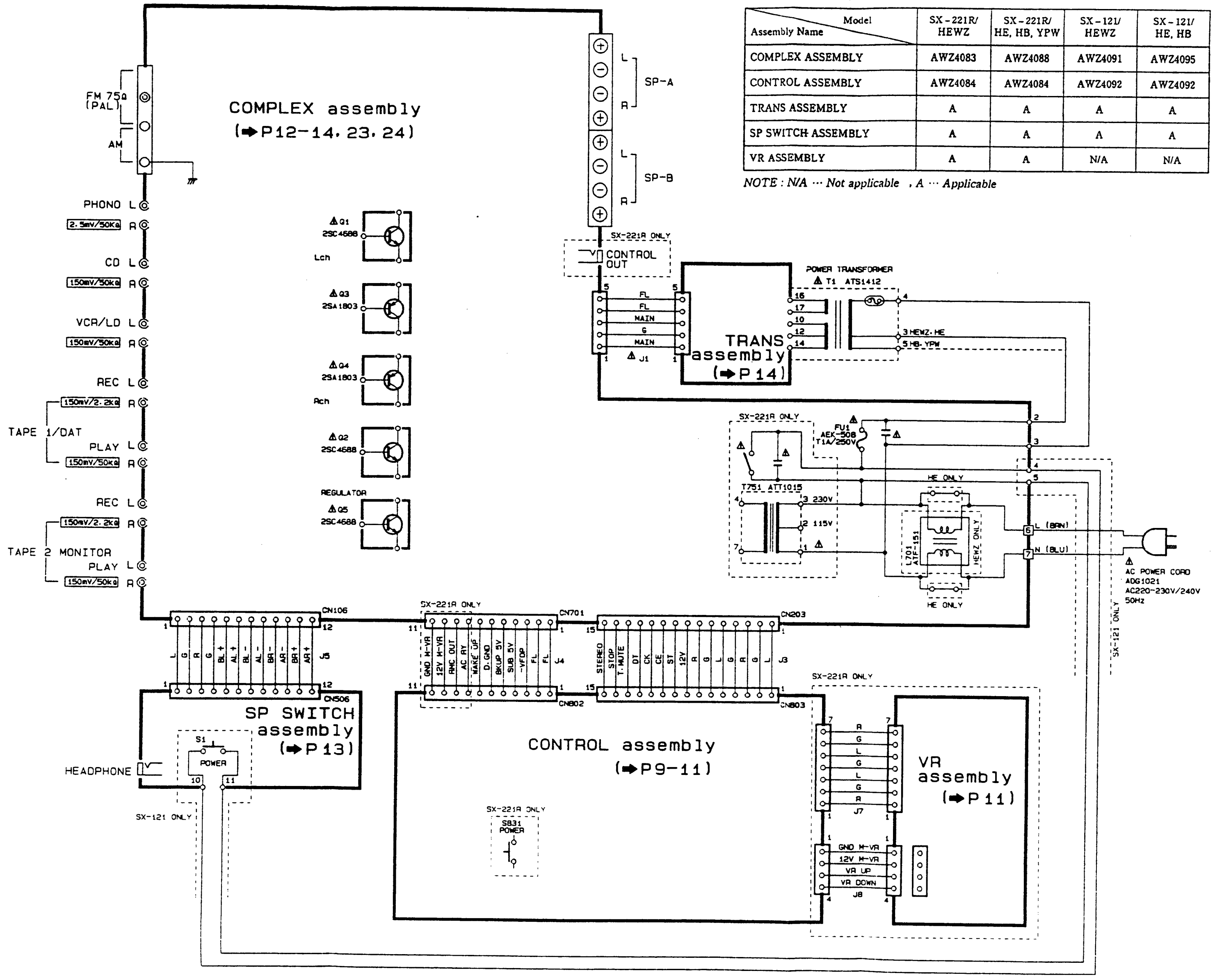
HINWEIS:

Änderung der technischen Daten und des Design ohne vorherige Bekanntgabe vorbehalten.

* *Messungen durch Audio-Spektralanalysator.*

3. SCHEMATIC AND PCB CONNECTIONS DIAGRAMS

3.1 OVERALL SCHEMATIC DIAGRAM


FM 75Ω (PAL)
AM
PHONO L R
2.5mV/50kΩ
CD L R
150mV/50kΩ
VCR/LD L R
150mV/50kΩ
TAPE 1/DAT
REC L R
150mV/2.2kΩ
PLAY L R
150mV/50kΩ
TAPE 2 MONITOR
REC L R
150mV/2.2kΩ
PLAY L R
150mV/50kΩ
COMPLEX assembly
(➡P12–14, 23, 24)
Q1 2SC4688
Lch
Q3 2SA1803
Q4 2SA1803
Rch
Q2 2SC4688
REGULATOR
Q5 2SC4688
SP-A
SP-B
L R
SX-221R ONLY
CONTROL OUT
FL FL MAIN G MAIN
J1
TRANS assembly
(➡P14)
POWER TRANSFORMER
T1 ATS1412
16 17 10 12 14
3 HEWZ, HE
5 HB, YPW
SX-221R ONLY
FU1 AEK-508 T1A/250V
T751 ATT1015
3 230V
2 115V
HE ONLY
L701 ATF-151
HEWZ ONLY
L (BRN)
N (BLU)
AC POWER CORD
ADG1021
AC220–230V/240V
50Hz
SX-121 ONLY
CN106
L G R G BL+ AL+ BL– AL– BR– AR– BR+ AR+
J5
CN506
SP SWITCH assembly
(➡P13)
S1 POWER
HEADPHONE
SX-121 ONLY
SX-221R ONLY
CN701
GND M-VR 12V M-VR RMC OUT AC RY WAKE UP D.GND BKUP 5V SUB 5V –VFDP FL FL
J4
CN802
CN203
STEREO STOP T.MUTE DT CK CE ST 12V R G L G R G L
J3
CN803
CONTROL assembly
(➡P9–11)
SX-221R ONLY
S831 POWER
SX-221R ONLY
R G L G L G R
J7
GND M-VR 12V M-VR VR UP VR DOWN
J8
VR assembly
(➡P11)

Contrast of Usage of Assemblies

Model / Assembly Name	SX-221R/ HEWZ	SX-221R/ HE, HB, YPW	SX-121/ HEWZ	SX-121/ HE, HB
COMPLEX ASSEMBLY	AWZ4083	AWZ4088	AWZ4091	AWZ4095
CONTROL ASSEMBLY	AWZ4084	AWZ4084	AWZ4092	AWZ4092
TRANS ASSEMBLY	A	A	A	A
SP SWITCH ASSEMBLY	A	A	A	A
VR ASSEMBLY	A	A	N/A	N/A

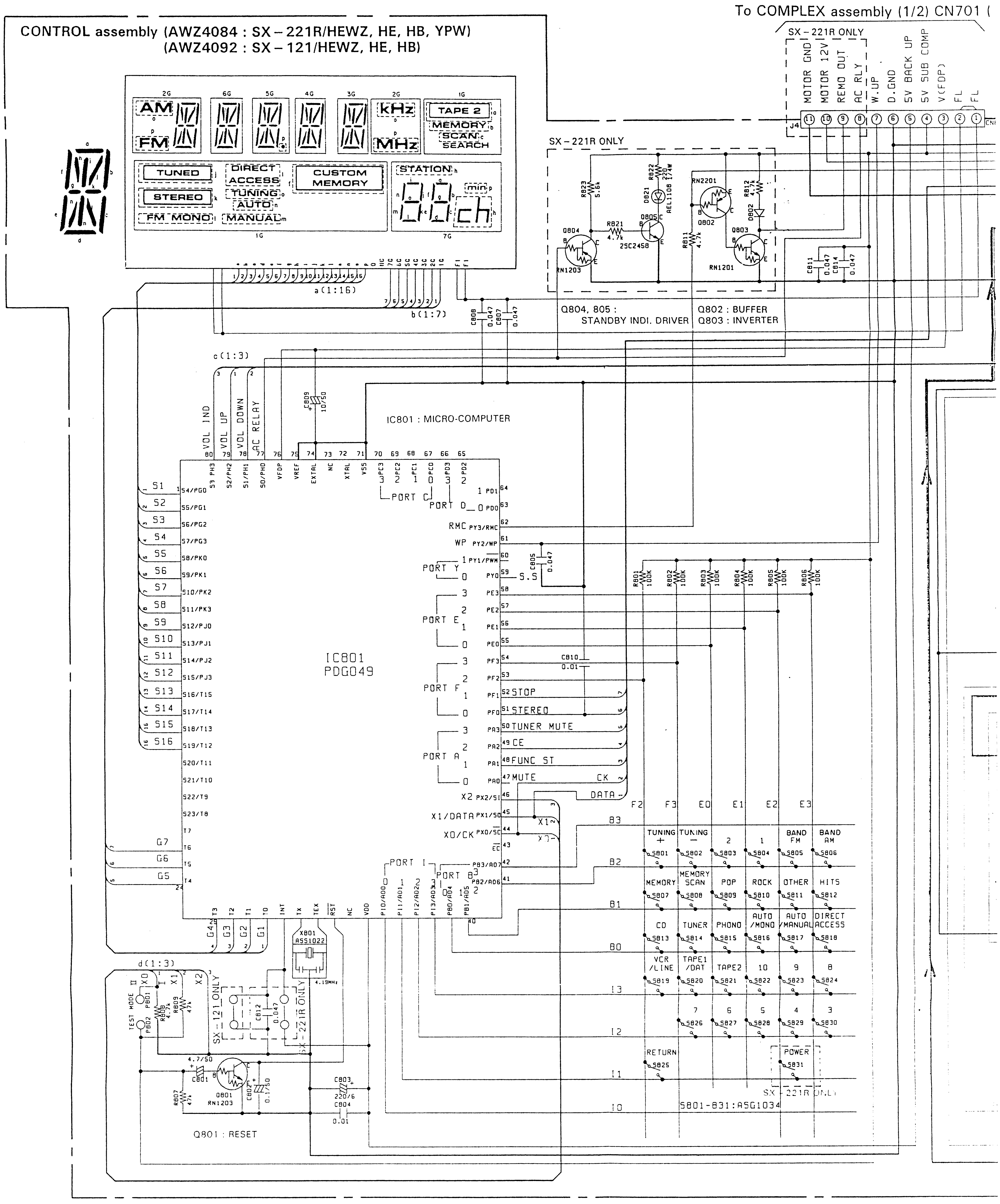
NOTE : N/A ··· Not applicable , A ··· Applicable

Note: (Type 3)

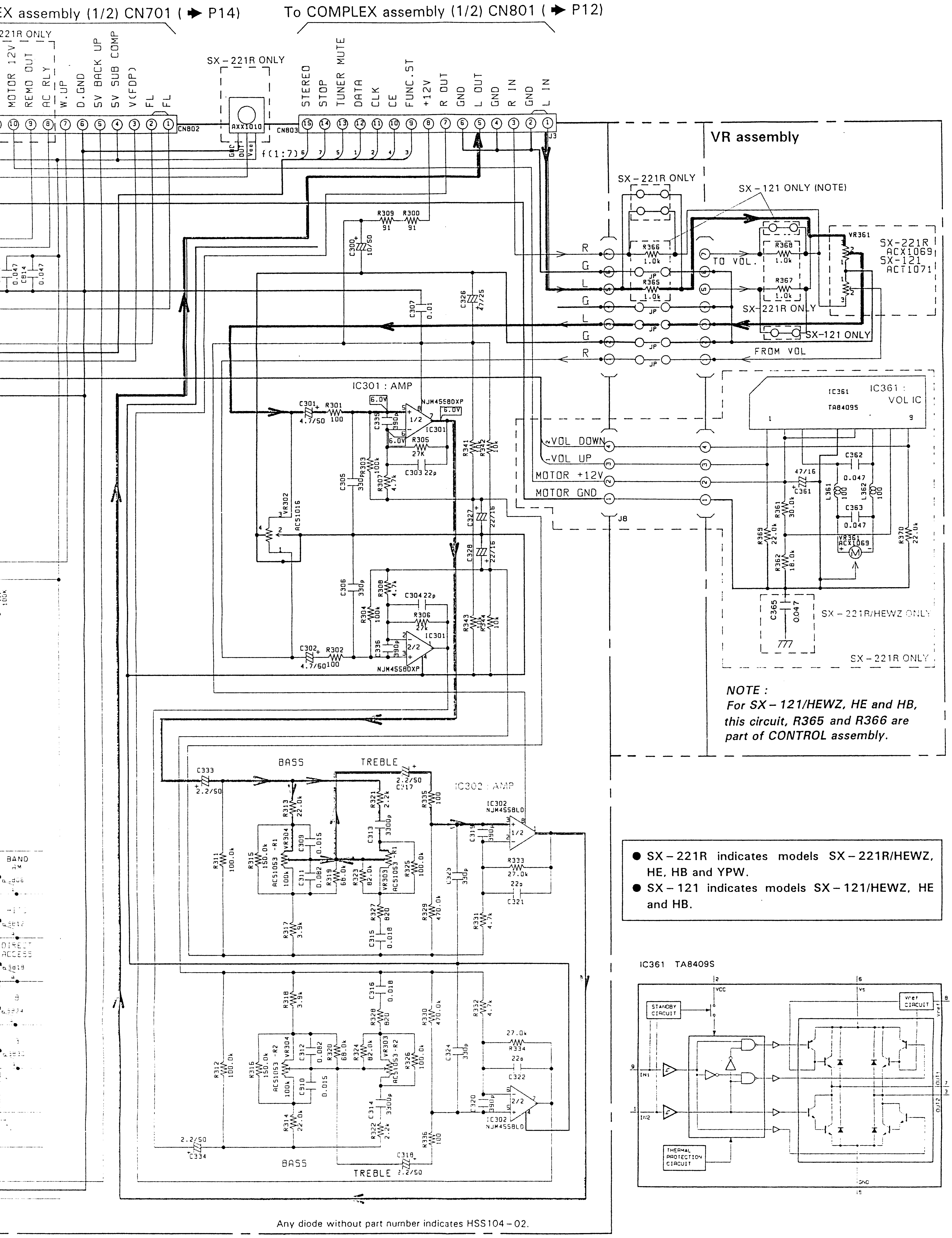
1. **When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".**
2. **Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.**
3. **RESISTORS:**
   Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.
   Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
   Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
4. **CAPACITORS:**
   Unit: p:pF or µF unless otherwise noted.
   Ratings: capacitor (µF)/ voltage (V) unless otherwise noted.
   Rated voltage: 50V except for electrolytic capacitors.
5. **COILS:**
   Unit: m:mH or µH unless otherwise noted.
6. **VOLTAGE AND CURRENT:**
   mV : Signal voltage at FM 1kHz, 100% MOD.
   : DC voltage (V) at no input signal unless otherwise noted. Value in ( ) is DC voltage at rated power.
   ⇦ mA or ← mA : DC current at no input signal unless otherwise noted.
7. **OTHERS:**
   - ➡ : Signal route.
   - ⊘ : Adjusting point.
   - ▼ (Red) : Measurement point.
   - The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. **SWITCHES** (Underline indicates switch position):

CONTROL assembly		SP SWITCH assembly	
S801	TUNING +	S570	SP A/B
S802	TUNING –	S1	POWER (SX-121 ONLY)
S803	2		
S804	1		
S805	BAND FM		
S806	BAND AM		
S807	MEMORY		
S808	MEMORY SCAN		
S809	POP		
S810	ROCK		
S811	OTHER		
S812	HITS		
S813	CD		
S814	TUNER		
S815	PHONO		
S816	AUTO/MONO		
S817	AUTO/MANUAL		
S818	DIRECT ACCESS		
S819	VCR/LD		
S820	TAPE1/DAT		
S821	TAPE2/MONITOR		
S822	0		
S823	9		
S824	8		
S825	RETURN		
S826	7		
S827	6		
S828	5		
S829	4		
S830	3		
S831	POWER (SX-221R ONLY)		

3.2 CONTROL ASSEMBLY AND VR ASSEMBLY



To COMPLEX assembly (1/2) CN701 (
CONTROL assembly (AWZ4084 : SX-221R/HEWZ, HE, HB, YPW)
(AWZ4092 : SX-121/HEWZ, HE, HB)
SX-221R ONLY
MOTOR GND
MOTOR 12V
REMO OUT
AC RLY
W.UP
D.GND
5V BACK UP
5V SUB COMP
V(FDP)
FL
FL
J4
AM
FM
kHz
MHz
TAPE 2
MEMORY
SCAN
SEARCH
TUNED
STEREO
FM MONO
DIRECT ACCESS
TUNING
AUTO
MANUAL
CUSTOM MEMORY
STATION
min
ch
a(1:16)
b(1:7)
c(1:3)
d(1:3)
R823 5.6k
R822 220 1/4W
D821 AEL1108
RN2201
R812 4.7k
D802
Q805
Q804
R821 4.7k
2SC2458
R811 4.7k
Q802
Q803
RN1203
RN1201
C811 0.047
C814 0.047
C808 0.047
C807 0.047
Q804, 805 : STANDBY INDI. DRIVER
Q802 : BUFFER
Q803 : INVERTER
VOL IND
VOL UP
VOL DOWN
AC RELAY
C809 10/50
IC801 : MICRO-COMPUTER
IC801
PDG049
PORT C
PORT D
PORT Y
PORT E
PORT F
PORT A
PORT I
PORT B
RMC
WP
S.S
C805 0.047
C810 0.01
STOP
STEREO
TUNER MUTE
CE
FUNC ST
MUTE
CK
DATA
X2
X1/DATA
X0/CK
S1 S2 S3 S4 S5 S6 S7 S8 S9 S10 S11 S12 S13 S14 S15 S16
G7 G6 G5 G4 G3 G2 G1
R801 100K
R802 100K
R803 100K
R804 100K
R805 100K
R806 100K
F2 F3 E0 E1 E2 E3
B3 B2 B1 B0 I3 I2 I1 I0
TUNING + S801
TUNING − S802
2 S803
1 S804
BAND FM S805
BAND AM S806
MEMORY S807
MEMORY SCAN S808
POP S809
ROCK S810
OTHER S811
HITS S812
CD S813
TUNER S814
PHONO S815
AUTO /MONO S816
AUTO /MANUAL S817
DIRECT ACCESS S818
VCR /LINE S819
TAPE1 /DAT S820
TAPE2 S821
10 S822
9 S823
8 S824
7 S826
6 S827
5 S828
4 S829
3 S830
RETURN S825
POWER S831
SX-221R ONLY
S801-831:ASG1034
X801 ASS1022 4.19MHz
SX-121 ONLY
SX-221R ONLY
C812 0.047
TEST MODE
P801
P802
R808 4.7k
R809 47k
C801 4.7/50
Q801 RN1203
C802 0.1/50
R807 4.7k
C803 220/6
C804 0.01
Q801 : RESET


X assembly (1/2) CN701 (➧ P14)
To COMPLEX assembly (1/2) CN801 (➧ P12)
221R ONLY
MOTOR 12V
REMO OUT
AC RLY
W.UP
D.GND
5V BACK UP
5V SUB COMP
V(FDP)
FL
FL
CN802
SX-221R ONLY
AXX1010
CN803
STEREO
STOP
TUNER MUTE
DATA
CLK
CE
FUNC.ST
+12V
R OUT
GND
L OUT
GND
R IN
GND
L IN
J3
VR assembly
SX-221R ONLY
SX-121 ONLY (NOTE)
R366 1.0k
R365 1.0k
R368 1.0k
R367 1.0k
TO VOL.
VR361
SX-221R ACX1069
SX-121 ACT1071
SX-221R ONLY
SX-121 ONLY
FROM VOL
IC361 : VOL IC
TA8409S
VOL DOWN
VOL UP
MOTOR +12V
MOTOR GND
J8
C362
C363 0.047
C361 47/16
L361
L362
R361 30.0k
R369 22.0k
R362 18.0k
R370 22.0k
C365 0.047
SX-221R/HEWZ ONLY
SX-221R ONLY
R309 91
R300 91
C300 10/50
C307 0.01
C326 47/25
IC301 : AMP
NJM4558DXP
C301 4.7/50
R301 100
R305 27K
C303 22p
C335 390p
R303 100k
R307 4.7k
C305 330p
R341
R342 10k
VR302 ACS1016
C327 22/16
C328 22/16
C306 330p
R308 4.7k
C304 22p
R306 27k
R304 100k
C336 390p
C302 4.7/50
R302 100
R343
R344 10k
C333 2.2/50
BASS
TREBLE
C317 2.2/50
IC302 : AMP
NJM4558LD
R313 22.0k
R321 2.2k
R335 100
R311 100.0k
R315 150.0k
VR304 ACS1053-R1
C309 0.015
C311 0.082
R319 68.0k
C313 3300p
R323 82.0k
VR303 ACS1053-R1
R325 100.0k
C319 390p
C323 330p
R333 27.0k
C321 22p
R317 3.9k
R327 820
C315 0.018
R329 470.0k
R331 4.7k
R318 3.9k
C316 0.018
R328 820
R330 470.0k
R332 4.7k
R312 100.0k
R316 150.0k
VR304 ACS1053-R2
C312 0.082
C310 0.015
R320 68.0k
R324 82.0k
VR303 ACS1053-R2
R326 100.0k
C324 330p
R334 27.0k
C322 22p
C320 390p
R314 22.0k
R322 2.2k
C314 3300p
R336 100
C334 2.2/50
C318 2.2/50
BAND
DIRECT ACCESS
IC361 TA8409S
VCC
STANDBY CIRCUIT
Vref CIRCUIT
IN1
IN2
OUT1
OUT2
THERMAL PROTECTION CIRCUIT
GND

NOTE :
For SX-121/HEWZ, HE and HB, this circuit, R365 and R366 are part of CONTROL assembly.

- ● SX-221R indicates models SX-221R/HEWZ, HE, HB and YPW.
- ● SX-121 indicates models SX-121/HEWZ, HE and HB.

Any diode without part number indicates HSS104-02.

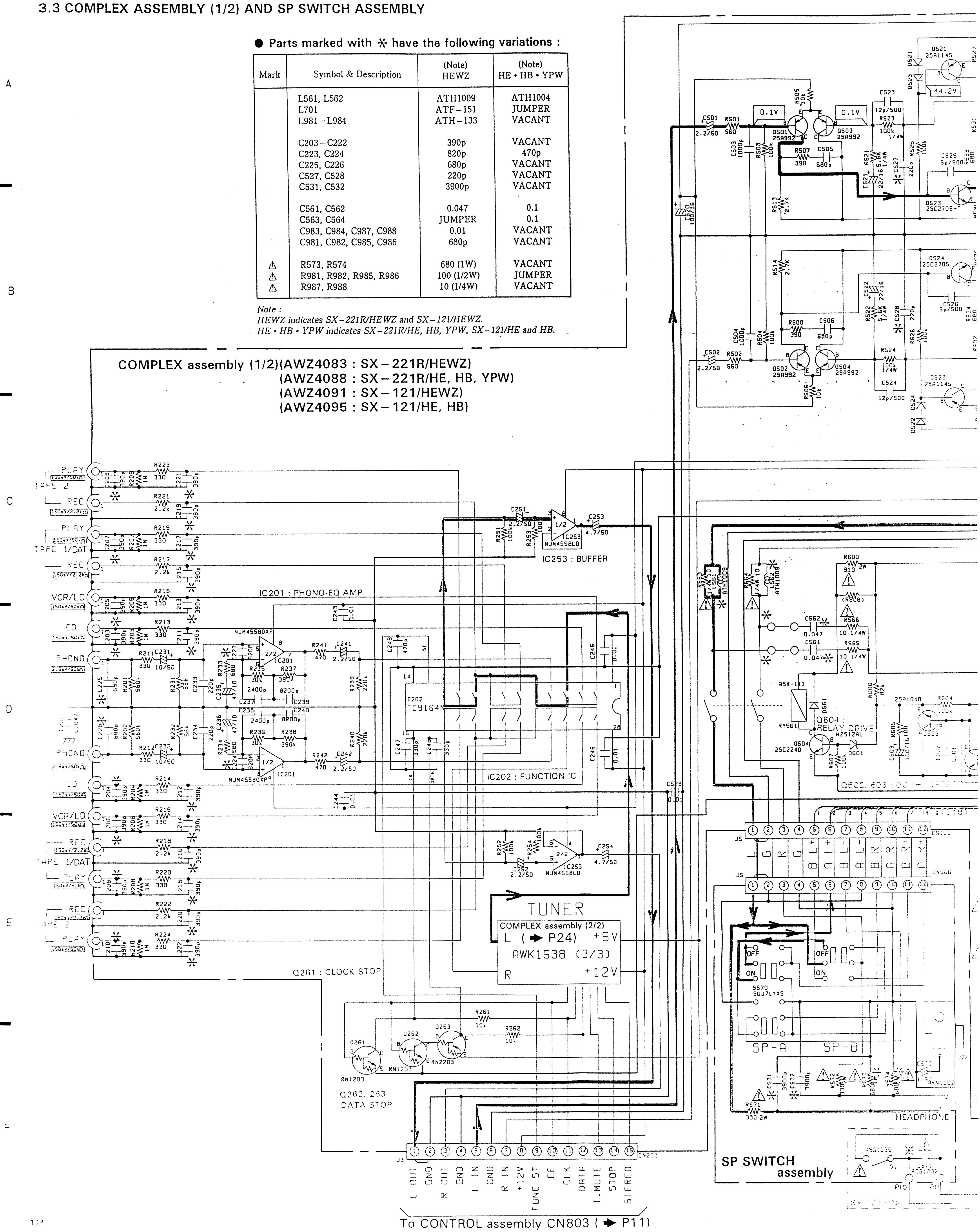
3.3 COMPLEX ASSEMBLY (1/2) AND SP SWITCH ASSEMBLY

- **Parts marked with ⚹ have the following variations :**

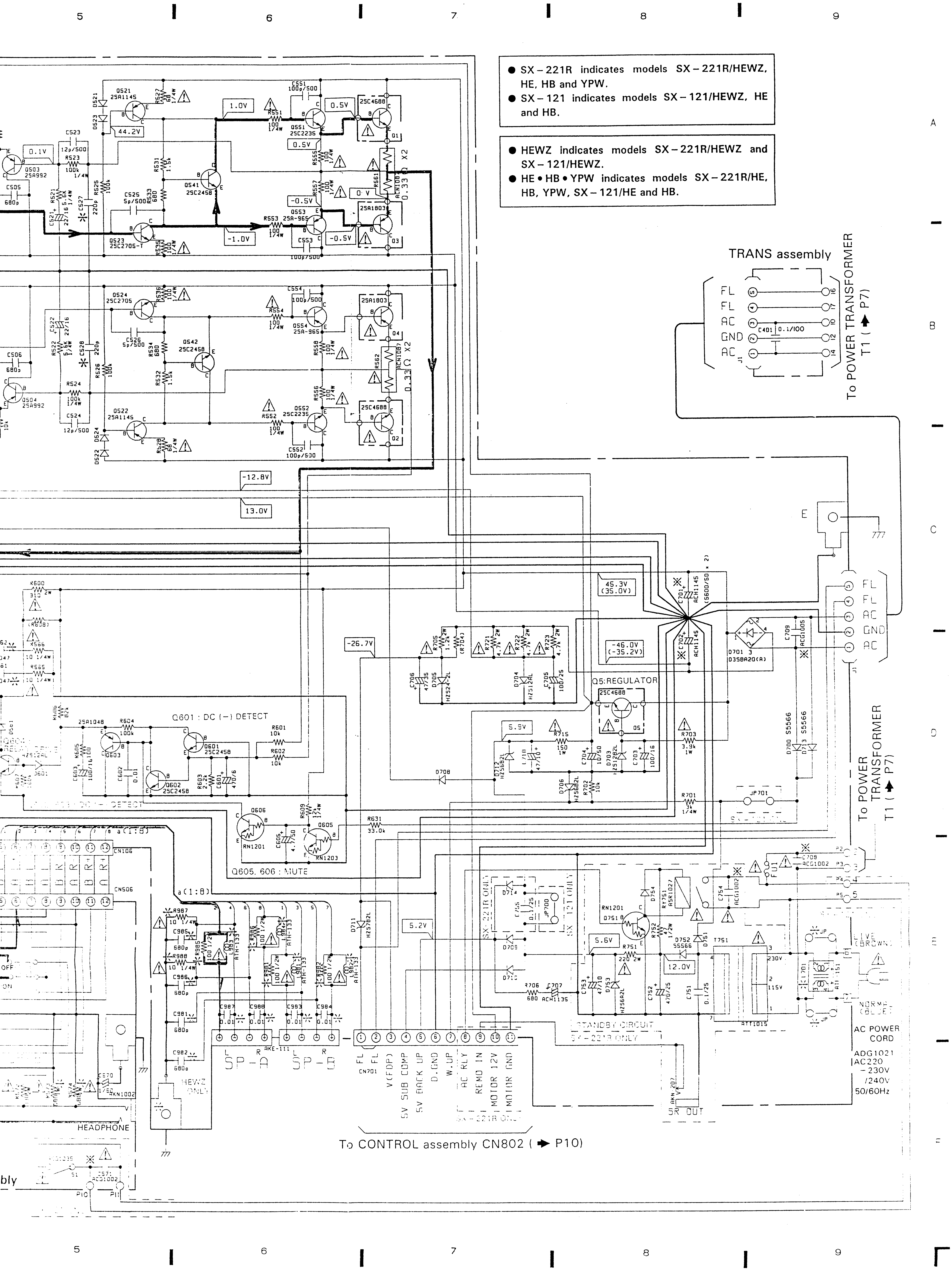
Mark	Symbol & Description	(Note) HEWZ	(Note) HE • HB • YPW
	L561, L562	ATH1009	ATH1004
	L701	ATF-151	JUMPER
	L981-L984	ATH-133	VACANT
	C203-C222	390p	VACANT
	C223, C224	820p	470p
	C225, C226	680p	VACANT
	C527, C528	220p	VACANT
	C531, C532	3900p	VACANT
	C561, C562	0.047	0.1
	C563, C564	JUMPER	0.1
	C983, C984, C987, C988	0.01	VACANT
	C981, C982, C985, C986	680p	VACANT
⚠	R573, R574	680 (1W)	VACANT
⚠	R981, R982, R985, R986	100 (1/2W)	JUMPER
⚠	R987, R988	10 (1/4W)	VACANT

Note :
HEWZ indicates SX-221R/HEWZ and SX-121/HEWZ.
HE • HB • YPW indicates SX-221R/HE, HB, YPW, SX-121/HE and HB.

COMPLEX assembly (1/2)(AWZ4083 : SX-221R/HEWZ)
(AWZ4088 : SX-221R/HE, HB, YPW)
(AWZ4091 : SX-121/HEWZ)
(AWZ4095 : SX-121/HE, HB)



2
3
4
5
A
B
C
D
E
F
1
TAPE 2 PLAY
REC
TAPE 1/DAT PLAY
REC
VCR/LD
CD
PHONO
IC201 : PHONO-EQ AMP
NJM4558DXP
IC253 : BUFFER
NJM4558LD
IC202 : FUNCTION IC
TC9164N
TUNER
COMPLEX assembly (2/2)
L (➡ P24) +5V
AWK1538 (3/3)
R +12V
Q261 : CLOCK STOP
Q262, 263 : DATA STOP
Q261 RN1203
Q262 RN1203
Q263 RN2203
R261 10k
R262 10k
Q501 2SA992
Q502 2SA992
Q503 2SA992
Q504 2SA992
Q521 2SA1145
Q522 2SA1145
Q523 2SC2705-T
Q524 2SC2705
0.1V
44.2V
ASR-111
RY561
Q604 : RELAY DRIVE
Q604 2SC2240
HZS12AL
2SA1048
Q602, 603 : DC
R600 910 2W
C562 0.047
C561 0.047
R566 10 1/4W
R565 10 1/4W
L561 ATH1009
L562 ATH1009
J5
CN106
CN506
L
G
R
G
B L+
A L+
B L-
A L-
B R-
A R-
B R+
A R+
OFF
ON
S570 SUJ7LYXS
SP-A
SP-B
R571 330 2W
HEADPHONE
SP SWITCH assembly
J3
CN203
L OUT
GND
R OUT
GND
L IN
GND
R IN
+12V
FUNC ST
CE
CLK
DATA
T.MUTE
STOP
STEREO
To CONTROL assembly CN803 (➡ P11)


5
6
7
8
9
A
B
C
D
E
F
Q521 2SA1145
Q523 2SC2705-T
Q524 2SC2705
Q522 2SA1145
Q541 2SC2458
Q542 2SC2458
Q551 2SC2235
Q552 2SC2235
Q553 2SA-965
Q554 2SA-965
Q503 2SA992
Q504 2SA992
2SC4688
2SA1803
Q1
Q2
Q3
Q4
R561
R562
ACN1087
0.33 Ω X2
1.0V
0.5V
0.1V
44.2V
-0.5V
0 V
-1.0V
-12.8V
13.0V
45.3V (35.0V)
-46.0V (-35.2V)
-26.7V
5.5V
5.2V
5.6V
12.0V
C701
C702
ACH1145
(5600/50 x 2)
D701 3
0358A20(A)
C709
ACG1005
Q5:REGULATOR
2SC4688
Q5
R715 150 1W
R703 3.9k 1W
R701 3k 1/4W
JP701
D700 S5566
D713 S5566
Q601 : DC (-) DETECT
2SA1048
Q601 2SC2458
Q602 2SC2458
Q603
R600 310 2W
R601 10k
R602 10k
R604 100k
R631 33.0k
Q605, 606 : MUTE
RN1201
RN1203
CN106
CN506
a(1:8)
AKE-111
SP-A
SP-B
L
R
HEWZ ONLY
HEADPHONE
bly
P10
P11
D711 HZS7B2L
SX-221R ONLY
SX-121 ONLY
JP700
R706 680
C707 ACH1135
STANDBY CIRCUIT
SX-221R ONLY
RN1201
Q751
D754
R7751
ASR1027
D752 SS566
R751 220 2W
T751
ATT1015
230V
115V
FU1
ACG1002
T701
ATT151
LIVE (BROWN)
NORMAL (BLUE)
AC POWER CORD
ADG1021
AC220
-230V
/240V
50/60Hz
CN701
FL
FL
V(FDP)
5V SUB COMP
5V BACK UP
D.GND
W.UP
AC RLY
REMO IN
MOTOR 12V
MOTOR GND
SX-221R ONLY
AKN 207
SR OUT
To CONTROL assembly CN802 (➜ P10)
TRANS assembly
FL
FL
AC
GND
AC
C401 0.1/100
J1
To POWER TRANSFORMER T1 (➜ P7)
E
To POWER TRANSFORMER T1 (➜ P7)

- SX－221R indicates models SX－221R/HEWZ, HE, HB and YPW.
- SX－121 indicates models SX－121/HEWZ, HE and HB.

- HEWZ indicates models SX－221R/HEWZ and SX－121/HEWZ.
- HE • HB • YPW indicates models SX－221R/HE, HB, YPW, SX－121/HE and HB.

3.4 PCB CONNECTION DIAGRAM

NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbois listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
E Q504	E or E	Transistor
Q215	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	+	Capacitor (Polarized)
C518		Capacitor (Non-polarized)

Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capacitor terminal marked with ◎(double circles) shows negatine terminal.
4. The diode terminal marked with ◎ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

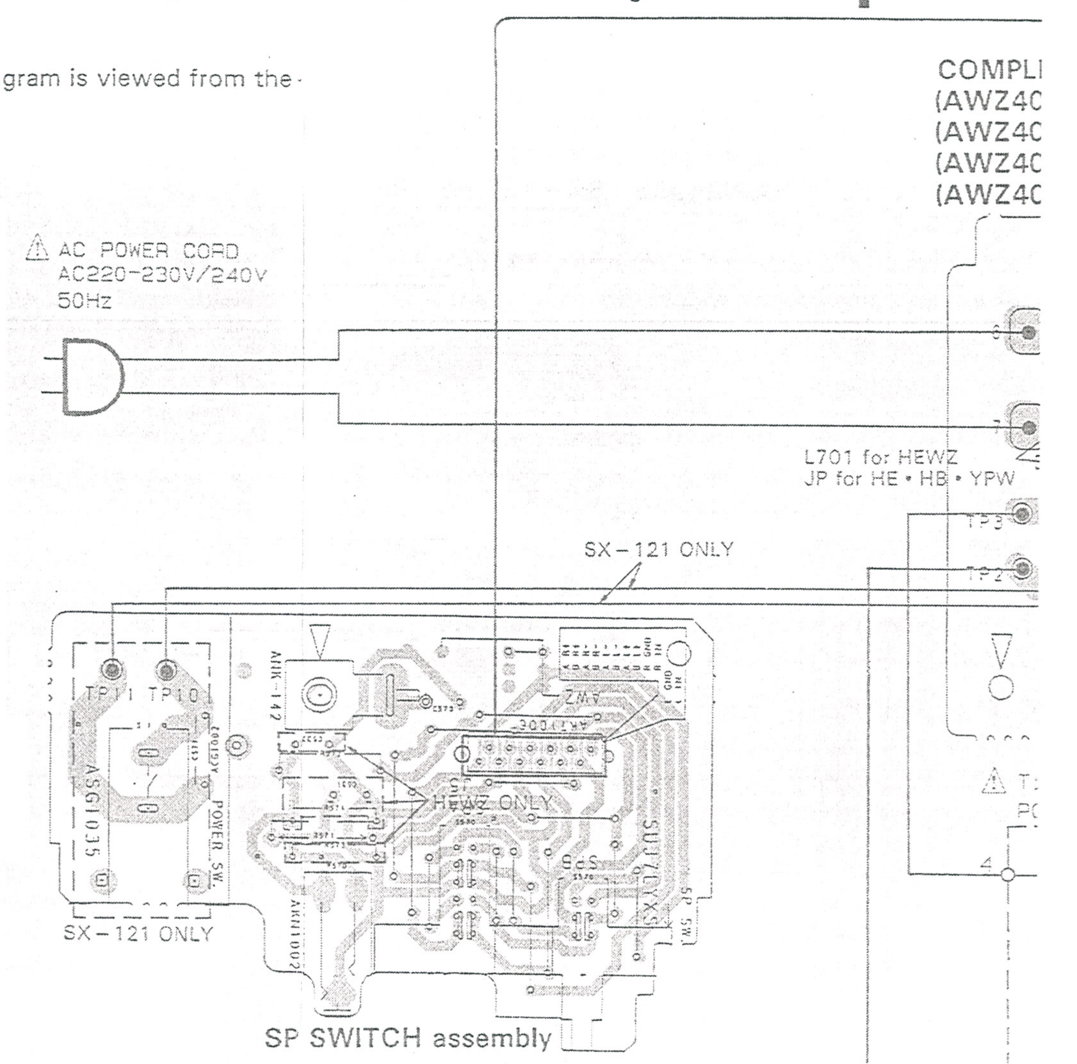
This P. C. B connection diagram is viewed from the parts mounted side.

Line Voltage Selection

Line voltage can be changed with the following steps.

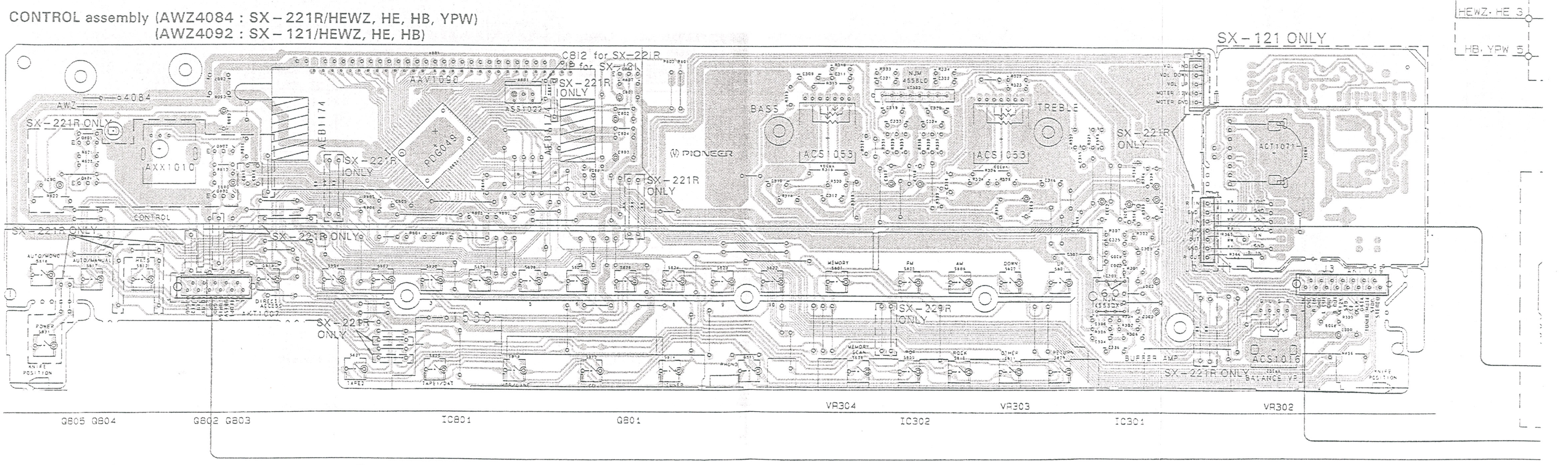
1. Disconnect the AC Power cord.
2. Remove the top cover.
3. Change the connection with the power transformer (T) primary taps.
4. Stick the line voltage label on the rear panel.

Part No.	Description
AAX-193	220V label
AAX-192	240V label

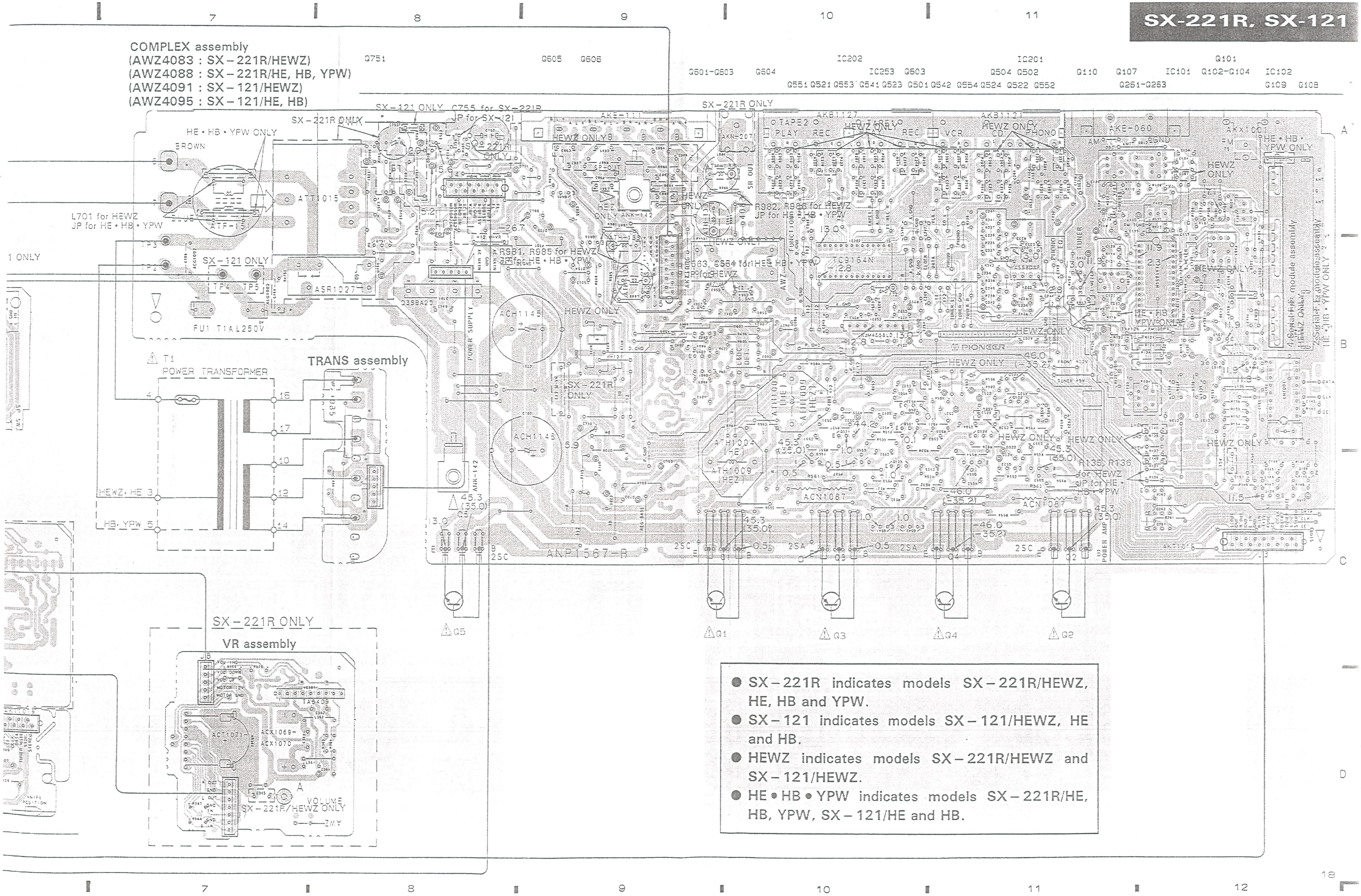

COMPL
(AWZ40
(AWZ40
(AWZ40
(AWZ40
⚠ AC POWER CORD
AC220-230V/240V
50Hz
L701 for HEWZ
JP for HE • HB • YPW
TP3
TP2
SX-121 ONLY
TP11 TP10
AHK-142
ASG1035
POWER SW.
ZWA
AKT1006
HEWZ ONLY
SX-121 ONLY

SP SWITCH assembly

CONTROL assembly (AWZ4084 : SX-221R/HEWZ, HE, HB, YPW)
(AWZ4092 : SX-121/HEWZ, HE, HB)

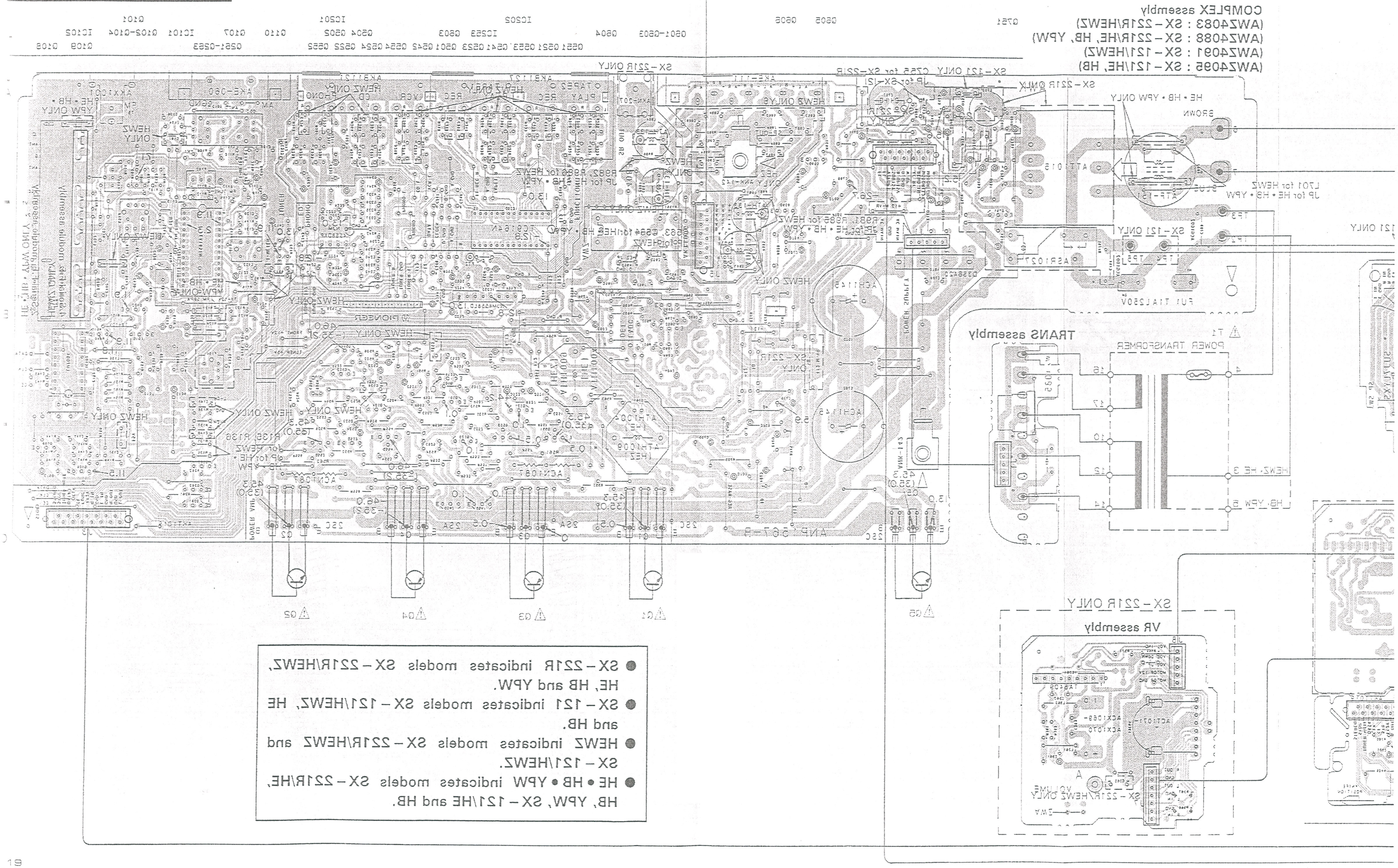

SX-121 ONLY
HEWZ, HE 3
HB, YPW 5
C812 for SX-221R
JP for SX-121
AWZ 4084
SX-221R ONLY
AXX1010
AAV1090
AEB1174
PDG048
AS51022
SX-221R ONLY
PIONEER
BASS
TREBLE
ACS1053
ACS1053
NJM 4558D
ACT1071
CONTROL
AUTO/MONO
AUTO/MANUAL
POWER
KNIFE POSITION
DIRECT ACCESS
AKT1007
MEMORY
FM
AM
DOWN
UP
MEMORY SCAN
ROCK
OTHER
TAPE2
TAPE1/DAT
TUNER
PHONO
BUFFER AMP
SX-221R ONLY
BALANCE VR
ACS1016
J3
Q805 Q804
Q802 Q803
IC801
Q801
VR304
IC302
VR303
IC301
VR302

COMPLEX assembly
(AWZ4083 : SX-221R/HEWZ)
(AWZ4088 : SX-221R/HE, HB, YPW)
(AWZ4091 : SX-121/HEWZ)
(AWZ4095 : SX-121/HE, HB)


7
8
9
10
11
12
A
B
C
D
Q751
Q605
Q606
IC202
IC201
Q101
Q501-Q503
Q604
IC253
Q603
Q504
Q502
Q110
Q107
IC101
Q102-Q104
IC102
Q551
Q521
Q553
Q541
Q523
Q501
Q542
Q554
Q524
Q522
Q552
Q261-Q263
Q109
Q108
SX-121 ONLY
C755 for SX-221R
JP for SX-121
SX-221R ONLY
SX-221R ONLY
HE • HB • YPW ONLY
BROWN
BLUE
L701 for HEWZ
JP for HE • HB • YPW
ATT1015
ATF-131
1 ONLY
SX-121 ONLY
TP3
TP2
TP4
TP5
ASR1027
D3SBA20
FU1 T1AL250V
T1
POWER TRANSFORMER
TRANS assembly
HEWZ, HE 3
HB, YPW 5
4
16
17
10
12
14
ACH1145
ACH1145
ANK-142
POWER SUPPLY
HEWZ ONLY
SX-221R ONLY
R981, R985 for HEWZ
JP for HE • HB • YPW
AKE-111
HEWZ ONLY
AKN-207
SR OUT
R982, R986 for HEWZ
JP for HE • HB • YPW
C563, C564 for HE • HB • YPW
JP for HEWZ
TC9164N
AKB1127
TAPE2
PLAY
REC
HEWZ ONLY
TAPE1
REC
VCR
AKB1121
HEWZ ONLY
CD
PHONO
AKE-060
AM
FM
AKX1001
HE • HB • YPW ONLY
HEWZ ONLY
HEWZ ONLY
HE • HB YPW ONLY
HEWZ ONLY
PIONEER
HEWZ ONLY
ATH1004 (HE)
ATH1009 (HEZ)
ACN1087
ACN1087
HEWZ ONLY
HEWZ ONLY
R135, R136 for HEWZ
JP for HE • HB • YPW
HEWZ ONLY
AKT1016
1. Serial 4bit module assembly
(HEWZ Only)
2. Serial 4bit module assembly
HE • HB • YPW ONLY
POWER AMP
ANP1567-B
45.3 (35.0)
13.0
46.0 (-35.2)
-46.0 (-35.2)
2SC
2SA
2SA
2SC
Q5
Q1
Q3
Q4
Q2
SX-221R ONLY
VR assembly
J6
TA8409
ACT1071
ACX1069
ACX1070
VOLUME
SX-221R/HEWZ ONLY
ZMV

- SX-221R indicates models SX-221R/HEWZ, HE, HB and YPW.
- SX-121 indicates models SX-121/HEWZ, HE and HB.
- HEWZ indicates models SX-221R/HEWZ and SX-121/HEWZ.
- HE • HB • YPW indicates models SX-221R/HE, HB, YPW, SX-121/HE and HB.

COMPLEX assembly
(AWZ4083 : SX-221R/HEWZ)
(AWZ4088 : SX-221R/HE, HB, YPW)
(AWZ4091 : SX-121/HEWZ)
(AWZ4095 : SX-121/HE, HB)


SX-221R ONLY
SX-121 ONLY
HEWZ ONLY
HE • HB • YPW ONLY
POWER TRANSFORMER
T1
TRANS assembly
SX-221R ONLY
VR assembly
PIONEER
Q2
Q4
Q3
Q1
Q5
ANP-567-B

- SX-221R indicates models SX-221R/HEWZ, HE, HB and YPW.
- SX-121 indicates models SX-121/HEWZ, HE and HB.
- HEWZ indicates models SX-221R/HEWZ and SX-121/HEWZ.
- HE • HB • YPW indicates models SX-221R/HE, HB, YPW, SX-121/HE and HB.

3.4 PCB CONNECTION DIAGRAM

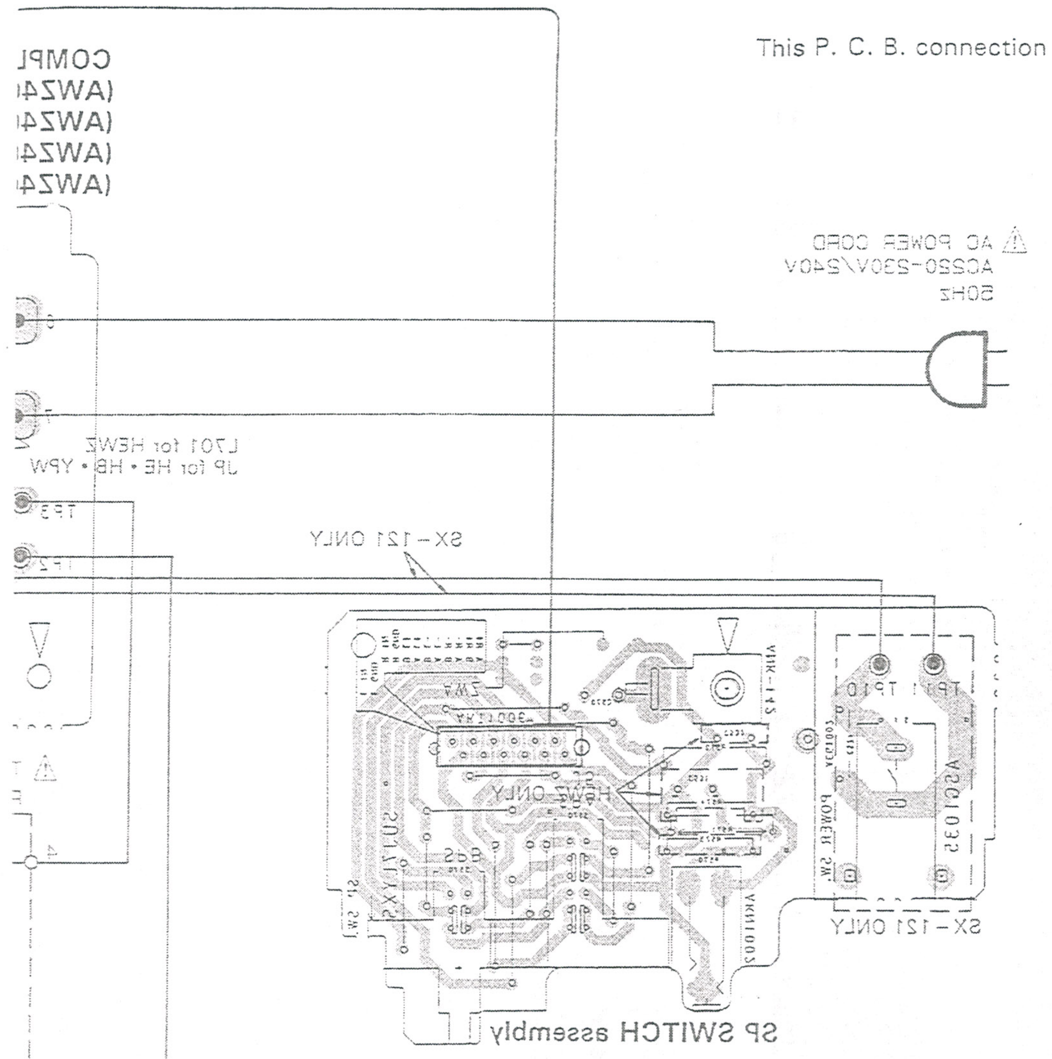
This P. C. B. connection diagram is viewed from the foil side.

Line Voltage Selection

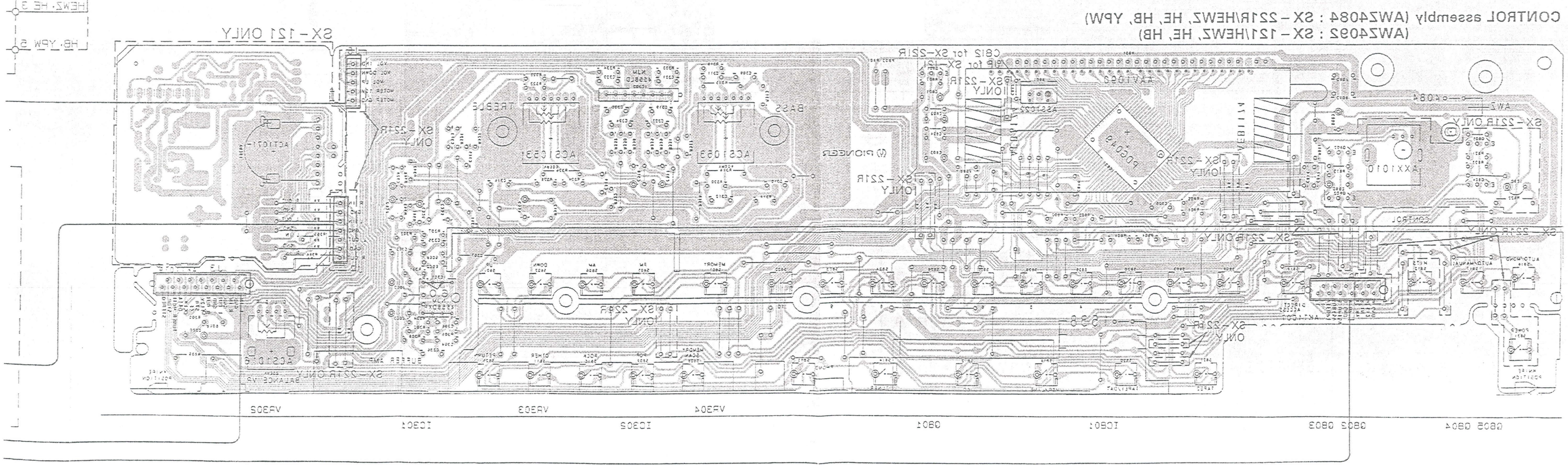
Line voltage can be changed with the following steps.

1. Disconnect the AC Power cord.
2. Remove the top cover.
3. Change the connection with the power transformer (T) primary taps.
4. Stick the line voltage label on the rear panel.

Part No.	Description
AAX−193	220V label
AAX−192	240V label


COMPL
(AWZ4
(AWZ4
(AWZ4
(AWZ4
AC POWER CORD
AC220-230V/240V
50Hz
L701 for HEWZ
JP for HE • HB • YPW
SX−121 ONLY
HEWZ ONLY
POWER SW.
SX−121 ONLY
HEWZ, HE 3
HB, YPW 3

SP SWITCH assembly


SX−121 ONLY
C812 for SX−221R
JP for SX−121
SX−221R ONLY
TREBLE
BASS
PIONEER
ACS1053
AXX1010
SX−221R ONLY
AUTO/MONO
POWER
VR302
VR303
VR304
IC301
IC302
Q801
IC801
Q802 Q803
Q804 Q805

CONTROL assembly (AWZ4084 : SX−221R/HEWZ, HE, HB, YPW)
(AWZ4092 : SX−121/HEWZ, HE, HB)

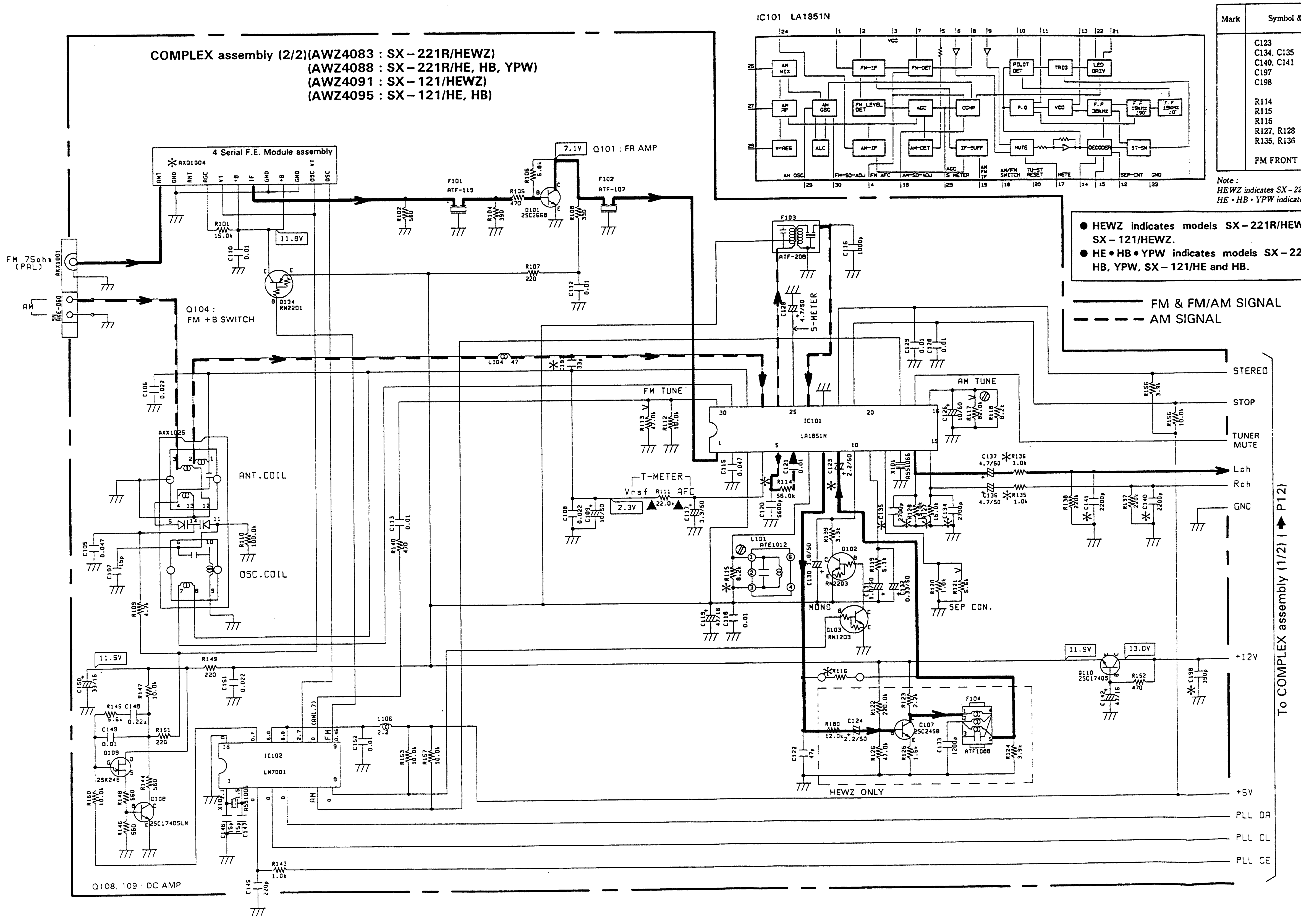
3.5 COMPLEX ASSEMBLY (2/2)(TUNER SECTION)

- Parts marked with ✻ have the following variations :

Mark	Symbol & Description	(Note) HEWZ	(Note) HE • HB • YPW
	C123	2.2/50	1.0/50
	C134, C135	2700p	8200p
	C140, C141	2200p	VACANT
	C197	33p	VACANT
	C198	390p	VACANT
	R114	56k	43k
	R115	8.2k	4.7k
	R116	VACANT	15k
	R127, R128	15k	10k
	R135, R136	1k	JUMPER
	FM FRONT END	AXQ1004	AXQ1002

Note :
HEWZ indicates SX-221R/HEWZ and SX-121/HEWZ.
HE • HB • YPW indicates SX-221R/HE, HB, YPW, SX-121/HE and HB.

- **HEWZ indicates models SX-221R/HEWZ and SX-121/HEWZ.**
- **HE • HB • YPW indicates models SX-221R/HE, HB, YPW, SX-121/HE and HB.**


COMPLEX assembly (2/2)(AWZ4083 : SX-221R/HEWZ)
(AWZ4088 : SX-221R/HE, HB, YPW)
(AWZ4091 : SX-121/HEWZ)
(AWZ4095 : SX-121/HE, HB)
IC101 LA1851N
AM MIX
AM RF
V-REG
AM OSC
ALC
FM-IF
FM LEVEL DET
AM-IF
FM-DET
AGC
AM-DET
COMP
IF-BUFF
PILOT DET
P.D
MUTE
TRIG
VCO
LED DRIV
F.F 38KHz
DECODER
F.F 19KHz 90°
F.F 19KHz 0°
ST-SW
VCC
AM OSC
FM-SD-ADJ
FM AFC
AM-SD-ADJ
AGC
S METER
AM FM IF
AM/FM SWITCH
TU-ST RESET
METE
SEP-CNT
GND
4 Serial F.E. Module assembly
✻ AXQ1004
ANT GND ANT AGC VT +B IF GND +B GND OSC VT OSC
FM 75ohm (PAL)
AM
Q104 : FM +B SWITCH
Q104 RN2201
Q101 : FR AMP
Q101 2SC2668
7.1V
11.8V
F101 ATF-119
F102 ATF-107
F103 ATF-208
FM TUNE
AM TUNE
S-METER
T-METER
Vref
AFC
2.3V
IC101 LA1851N
ANT.COIL
OSC.COIL
L101 ATE1012
Q102 RN2203
Q103 RN1203
MONO
SEP CON.
11.5V
13.0V
Q110 2SC1740S
Q107 2SC2458
F104 ATF1088
HEWZ ONLY
IC102 LM7001
Q109 2SK246
Q108 2SC1740SLN
Q108, 109 : DC AMP
11.5V
FM & FM/AM SIGNAL
AM SIGNAL
STEREO
STOP
TUNER MUTE
Lch
Rch
GND
+12V
+5V
PLL DA
PLL CL
PLL CE
To COMPLEX assembly (1/2) (➡ P12)

4. PCB PARTS LIST

NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω → 56 × 10¹ → 561 .... RD1/8PM$\boxed{5}\boxed{6}\boxed{1}$J
47kΩ → 47 × 10³ → 473 .... RD1/4PS$\boxed{4}\boxed{7}\boxed{3}$J
0.5Ω → 0R5 .... RN2H$\boxed{0}\boxed{R}\boxed{5}$K
1Ω → 010 .... RS1P$\boxed{0}\boxed{1}\boxed{0}$K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ → 562 × 10¹ → 5621 .... RN1/4PC$\boxed{5}\boxed{6}\boxed{2}\boxed{1}$F

4.1 FOR SX – 221R/HEWZ

LIST OF ASSEMBLIES

Mark	No.	Description	Parts No.
◉		COMPLEX ASSEMBLY	AWZ4083
◉		CONTROL ASSEMBLY	AWZ4084
NSP		TRANS ASSEMBLY	AWZ4085
NSP		SP SWITCH ASSEMBLY	AWZ4086
NSP		VR ASSEMBLY	AWZ4087

COMPLEX ASSEMBLY

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	IC101	AM/FM IC	LA1851N
	IC102	PLL IC	LM7001
	IC201	OP-AMP IC	NJM4558DXP
	IC202	E-SW IC	TC9164N
	IC253	OP-AMP IC	NJM4558LD
	Q101	TRANSISTOR	2SC2668
	Q102	TRANSISTOR	RN2203
	Q103	TRANSISTOR	RN1203
	Q104	TRANSISTOR	RN2201
	Q107	TRANSISTOR	2SC2458
	Q108	TRANSISTOR	2SC1740SLN
	Q109	N-FET	2SK246
	Q110	TRANSISTOR	2SC1740S
	Q261, 262	TRANSISTOR	RN1203
	Q263	TRANSISTOR	RN2203
	Q501–504	TRANSISTOR	2SA992
	Q521, 522	TRANSISTOR	2SA1145
	Q523, 524	TRANSISTOR	2SC2705
	Q541, 542	TRANSISTOR	2SC2458
	Q551, 552	TRANSISTOR	2SC2235
	Q553, 554	TRANSISTOR	2SA965
	Q601, 602	TRANSISTOR	2SC2458
	Q603	TRANSISTOR	2SA1048
	Q604	TRANSISTOR	2SC2240
	Q605	TRANSISTOR	RN1203
	Q606, 751	TRANSISTOR	RN1201
	D521–524	DIODE	HSS104-02
	D561	DIODE	HSS104-02
	D601	ZENER DIODE	HZS12AL
	D700, 713	DIODE	S5566
	D701	DIODE	D3SBA20 (A)
	D703	ZENER DIODE	HZS12B2L
	D704	ZENER DIODE	HZS12AL
	D705	ZENER DIODE	HZS24-2L
	D706	ZENER DIODE	HZS6B2L
	D708–710	DIODE	HSS104-02
	D711	ZENER DIODE	HZS7B2L
	D712	ZENER DIODE	HZS6B2L
	D714	DIODE	HSS104-02
	D751	DIODE	HSS104-02
	D752	DIODE	S5566
	D753	ZENER DIODE	HZS6A2L
	D754	DIODE	HSS104-02

RELAIES

Mark	No.	Description	Parts No.
	RY561	RELAY	ASR-111
⚠	RY751	RELAY	ASR1027

COILS & TRANSFORMER

Mark	No.	Description	Parts No.
	F101	CERAMIC FILTER	ATF-119
	F102	CERAMIC FILTER	ATF-107
	F103	CERAMIC FILTER	ATF-208
	F104	FILTER	ATF108S
	L101	COIL	ATE1012
	L104	AXIAL INDUCTOR	LAU470K
	L106	AXIAL INDUCTOR	LAU2R2M
	L561, 562	COIL	ATH1009
	L701	FILTER	ATF-151
	L981–984	COIL	ATH-133
⚠	T751	POWER TRANSFORMER	ATT1015

CAPACITORS

Mark	No.	Description	Parts No.
	C105	CERAMIC CAPACITOR	CKCYX473M16
	C106	AXIAL CERAMIC C.	CKPUYF223Z25
	C107	AXIAL CERAMIC C.	CCPUCH150J50
	C108	AXIAL CERAMIC C.	CKPUYF223Z25
	C109	ELECT. CAPACITOR	CEAS100M50
	C110	CERAMIC CAPACITOR	CKPUYY103N16
	C112 113	CERAMIC CAPACITOR	CKPUYY103N16
	C115	CERAMIC CAPACITOR	CKDYX473M25
	C116	CERAMIC CAPACITOR	CKPUYB102K50
	C117	ELECT. CAPACITOR	CEAS3R3M50
	C118	CERAMIC CAPACITOR	CKPUYY103N16
	C119	ELECT. CAPACITOR	CEAS470M16
	C120	CERAMIC CAPACITOR	CKPUYX562M16
	C121	CERAMIC CAPACITOR	CKPUYY103N16
	C122	AXIAL CAPACITOR	CCPUSL470J50
	C123, 124	ELECT. CAPACITOR	CEAS2R2M50
	C125	ELECT. CAPACITOR	CEAS4R7M50
	C126	ELECT. CAPACITOR	CEAS100M50
	C128, 129	CERAMIC CAPACITOR	CKPUYY103N16
	C130, 131	ELECT. CAPACITOR	CEAS010M50
	C132	ELECT. CAPACITOR	CEASR33M50
	C133	CERAMIC CAPACITOR	CKCYB122K50
	C134, 135	CERAMIC CAPACITOR	CKCYB272K50
	C136, 137	ELECT. CAPACITOR	CEAS4R7M50
	C140, 141	CERAMIC CAPACITOR	CKCYB222K50
	C142	ELECT. CAPACITOR	CEAS470M16
	C145	CERAMIC CAPACITOR	CKPUYB221K50
	C146, 147	AXIAL CERAMIC C.	CCPUCH150J50
	C148	AUDIO FILM CAPACITOR	CFTXA224J50
	C149	AUDIO FILM CAPACITOR	CFTXA103J50
	C150	ELECT. CAPACITOR	CEAS330M16
	C151	AXIAL CERAMIC C.	CKPUYF223Z25
	C152	CERAMIC CAPACITOR	CKPUYY103N16
	C197	AXIAL CAPACITOR	CCPUSL330J50
	C198	CERAMIC CAPACITOR	CKMYB391K50
	C201	CERAMIC CAPACITOR	CKCYF473Z50
	C203–222	CERAMIC CAPACITOR	CKMYB391K50
	C223, 224	CERAMIC CAPACITOR	CKMYB821K50
	C225, 226	CERAMIC CAPACITOR	CKMYB681K50
	C231, 232	ELECT. CAPACITOR	CEAS100M50
	C233, 234	CERAMIC CAPACITOR	CCCSL221J50
	C235, 236	ELECT. CAPACITOR	CEAS470M10
	C237, 238	MYLAR FILM CAPACITOR	CQMA242J50
	C239, 240	MYLAR FILM CAPACITOR	CQMA822K50
	C241, 242	ELECT. CAPACITOR	CEAS2R2M50
	C243–246	AXIAL CERAMIC C.	CKPUYF103Z25
	C247, 248	CERAMIC CAPACITOR	CKCYB331K50
	C249	CERAMIC CAPACITOR	CKCYB471K50
	C251, 252	ELECT. CAPACITOR	CEAS2R2M50
	C253, 254	ELECT. CAPACITOR	CEAS4R7M50
	C501, 502	ELECT. CAPACITOR	CEAS2R2M50
	C503, 504	CERAMIC CAPACITOR	CKCYB102K50
	C505, 506	CERAMIC CAPACITOR	CKCYB681K50
	C520	ELECT. CAPACITOR	CEAS101M16
	C521, 522	ELECT. CAPACITOR	CEAS220M16
	C523, 524	CERAMIC CAPACITOR	CCCSL120K500
	C525, 526	CERAMIC CAPACITOR	CCCSL050C500
	C527, 528	CERAMIC CAPACITOR	CKMYB221K50
	C529	CERAMIC CAPACITOR	CKCYF103Z50
	C551–554	CERAMIC CAPACITOR	CCCSL101K500
	C561, 562	AUDIO FILM CAPACITOR	CFTXA473J50
	C601	ELECT. CAPACITOR	CEAS471M6
	C602	AXIAL CERAMIC C.	CKPUYF103Z25
	C603	ELECT. CAPACITOR	CEAS101M16
	C605	ELECT. CAPACITOR	CEAS4R7M50
	C701, 702	ELECT. CAPACITOR (5600/DC50V)	ACH1145
	C703	ELECT. CAPACITOR	CEAS101M16
	C704	ELECT. CAPACITOR	CEHAQ100M50
	C705	ELECT. CAPACITOR	CEAS101M25
	C706	ELECT. CAPACITOR	CEHAQ470M35
	C707	CAPACITOR (0.047/5.5)	ACH1135
⚠	C708	CKA (0.01/AC400V)	ACG1002
	C709	CKA (0.01/AC250V)	ACG1005
	C710	ELECT. CAPACITOR	CEHAQ470M10
	C751	CERAMIC CAPACITOR	CKCYX104M25
	C752	ELECT. CAPACITOR	CEAS471M25
	C753	ELECT. CAPACITOR	CEAS470M10
⚠	C754	CKA (0.01/AC400V)	ACG1002
	C755	CERAMIC CAPACITOR	CKCYX104M25
	C981, 982	CERAMIC CAPACITOR	CKMYB681K50
	C983, 984	CERAMIC CAPACITOR	CKCYF103Z50
	C985, 986	CERAMIC CAPACITOR	CKMYB681K50
	C987, 988	CERAMIC CAPACITOR	CKCYF103Z50

RESISTORS

Mark	No.	Description	Parts No.
	R521, 522	CARBON FILM RESISTOR	RD1/4PM562J
	R523, 524	CARBON FILM RESISTOR	RD1/4PM104J
⚠	R527, 528	CARBON FILM RESISTOR	RD1/4PMF680J
⚠	R535, 536	FUSLIBLE RESISTOR	RFA1/4PS101J
⚠	R551–554	FUSLIBLE RESISTOR	RFA1/4PS101J
⚠	R555–558	CARBON FILM RESISTOR	RD1/4PMF101J
⚠	R561, 562	RESISTOR (0.33, 5W)	ACN1087
⚠	R563–566	CARBON FILM RESISTOR	RD1/4PMF100J
⚠	R600	METAL OXIDE RESISTOR	RS2LMF911J
	R609	CARBON FILM RESISTOR	RD1/4PM123J
	R701	CARBON FILM RESISTOR	RD1/4PM302J

Mark	No.	Description	Parts No.
⚠	R703	METAL OXIDE RESISTOR	RS1LMF392J
⚠	R705	METAL OXIDE RESISTOR	RS2LMF122J
⚠	R715	METAL OXIDE RESISTOR	RS1LMF151J
⚠	R721–723	METAL OXIDE RESISTOR	RS2LMF472J
⚠	R751	METAL OXIDE RESISTOR	RS2LMF221J
	R752	CARBON FILM RESISTOR	RD1/2PM470J
⚠	R981, 982	CARBON FILM RESISTOR	RD1/2PMF101J
⚠	R985, 986	CARBON FILM RESISTOR	RD1/2PMF101J
⚠	R987, 988	CARBON FILM RESISTOR	RD1/4PMF100J
		Other resistors	RD1/8PM□□□J

OTHERS

Mark	No.	Description	Parts No.
		PIN JACK 6P (PHONO, CD, VCR/LD)	AKB1121
		PIN JACK 8P (TAPE1/DAT, TAPE2 MONITOR)	AKB1127
		TERMINAL 2-P (ANTENNA)	AKE-060
		SPEAKER TERMINAL 8-P	AKE-111
		JACK (CONTROL)	AKN-207
	X101	CRYSTAL RESONATOR (456kHz)	ASS1066
	X102	CRYSTAL RESONATOR (7.2MHz)	ASS1005
		CONNECTOR (PAL SOCKET)	AKX1001
		AM RF TUNING BLOCK	AXX1025
		4 SERIAL F.E. MODULE ASSEMBLY	AXQ1004

NOTE :
4 Serial F.E. module assembly has no service parts.

CONTROL ASSEMBLY

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	IC301	OP-AMP IC	NJM4558DXP
	IC302	OP-AMP IC	NJM4558LD
	IC801	RECEIVER CONTROL	PDG049-B
	Q801	TRANSISTOR	RN1203
	Q802	TRANSISTOR	RN2201
	Q803	TRANSISTOR	RN1201
	Q804	TRANSISTOR	RN1203
	Q805	TRANSISTOR	2SC2458
	D802	DIODE	HSS104-02
	DS21	LED (RED)	AEL1108

SWITCHES

Mark	No.	Description	Parts No.
	S801–831	SWITCH	ASG1034

CAPACITORS

Mark	No.	Description	Parts No.
	C300	ELECT. CAPACITOR	CEJA100M50
	C301, 302	ELECT. CAPACITOR	CEAS4R7M50
	C303, 304	CERAMIC CAPACITOR	CCCSL220J50
	C305, 306	CERAMIC CAPACITOR	CKCYB331K50
	C307	AXIAL CERAMIC C.	CKPUYF103Z25
	C309, 310	AUDIO FILM CAPACITOR	CFTXA153J50
	C311, 312	AUDIO FILM CAPACITOR	CFTXA823J50
	C313, 314	MYLAR FILM CAPACITOR	CQMA332K50
	C315, 316	AUDIO FILM CAPACITOR	CFTXA183J50
	C317	ELECT. CAPACITOR	CEJA2R2M50
	C318	ELECT. CAPACITOR	CEAS2R2M50
	C319, 320	CERAMIC CAPACITOR	CKCYB391K50
	C321, 322	CERAMIC CAPACITOR	CCCSL220J50
	C323, 324	CERAMIC CAPACITOR	CKCYB331K50
	C326	ELECT. CAPACITOR	CEAS470M25
	C327, 328	ELECT. CAPACITOR	CEAS220M16
	C333	ELECT. CAPACITOR	CEJA2R2M50
	C334	ELECT. CAPACITOR	CEAS2R2M50
	C335, 336	CERAMIC CAPACITOR	CKCYB391K50
	C801	ELECT. CAPACITOR	CEJA4R7M50
	C802	ELECT. CAPACITOR	CEJA0R1M50
	C803	ELECT. CAPACITOR	CEJA221M6
	C804	AXIAL CERAMIC C.	CKPUYF103Z25
	C805	AXIAL CERAMIC C.	CKPUYF473Z16
	C807, 808	CERAMIC CAPACITOR	CKCYX473M25
	C809	ELECT. CAPACITOR	CEJA100M50
	C810	AXIAL CERAMIC C.	CKPUYF103Z25
	C811, 812	AXIAL CERAMIC C.	CKPUYF473Z16
	C814	AXIAL CERAMIC C.	CKPUYF473Z16

RESISTORS

Mark	No.	Description	Parts No.
	VR302	VR (500k - × 1)	ACS1016
	VR303, 304	VR (100k)	ACS1053
	R822	CARBON FILM RESISTOR	RD1/4PM221J
		Other resistors	RD1/8PM□□□J

OTHERS

Mark	No.	Description	Parts No.
		FL SPACER	AEB1174
		REMOTE RECEIVER UNIT	AXX1010
	V801	FL TUBE	AAV1090
	X801	CERAMIC OSCILLATOR (4.19MHz)	ASS1022

TRANS ASSEMBLY

CAPACITORS

Mark	No.	Description	Parts No.
	C401	CAPACITOR	CQMXA104J100

SP SWITCH ASSEMBLY

SWITCH

Mark	No.	Description	Parts No.
	S570	PUSH SWITCH	SUJ7LYXS

CAPACITORS

Mark	No.	Description	Parts No.
	C531, 532	CERAMIC CAPACITOR	CKCYB392K50
	C570	ELECT. CAPACITOR	CEAS010M50

RESISTORS

Mark	No.	Description	Parts No.
⚠	R571, 572	METAL OXIDE RESISTOR	RS2LMF331J
⚠	R573, 574	METAL OXIDE RESISTOR	RS1PMF681J

OTHERS

Mark	No.	Description	Parts No.
		JACK (HEADPHONE)	AKN1002

VR ASSEMBLY

SEMICONDUCTOR

Mark	No.	Description	Parts No.
	IC361	MECHANISM DRIVER IC	TA8409S

COILS

Mark	No.	Description	Parts No.
	L361, 362	AXIAL INDUCTOR	LAU101K

CAPACITORS

Mark	No.	Description	Parts No.
	C361	ELECT. CAPACITOR	CEAS470M16
	C362, 363	CERAMIC CAPACITOR	CKCYF473Z50
	C365	CERAMIC CAPACITOR	CKCYF473Z50

RESISTORS

Mark	No.	Description	Parts No.
	VR361	VARIABLE RESISTOR	ACX1069
		Other resistors	RD1/8PM☐☐☐J

4.2 FOR SX – 121/HEWZ

LIST OF ASSEMBLIES

Mark	No.	Description	Parts No.
NSP		TRANS ASSEMBLY	AWZ4085
◉		COMPLEX ASSEMBLY	AWZ4091
◉		CONTROL ASSEMBLY	AWZ4092
NSP		SP SWITCH ASSEMBLY	AWZ4094

TRANS ASSEMBLY

CAPACITOR

Mark	No.	Description	Parts No.
	C401	CAPACITOR	CQMXA104J100

COMPLEX ASSEMBLY

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	IC101	AM/FM IC	LA1851N
	IC102	PLL IC	LM7001
	IC201	OP–AMP IC	NJM4558DXP
	IC202	E–SW IC	TC9164N
	IC253	OP–AMP IC	NJM4558LD
	Q101	TRANSISTOR	2SC2668
	Q102	TRANSISTOR	RN2203
	Q103	TRANSISTOR	RN1203
	Q104	TRANSISTOR	RN2201
	Q107	TRANSISTOR	2SC2458
	Q108	TRANSISTOR	2SC1740SLN
	Q109	N–FET	2SK246
	Q110	TRANSISTOR	2SC1740S
	Q261, 262	TRANSISTOR	RN1203
	Q263	TRANSISTOR	RN2203
	Q501–504	TRANSISTOR	2SA992
	Q521, 522	TRANSISTOR	2SA1145
	Q523, 524	TRANSISTOR	2SC2705
	Q541, 542	TRANSISTOR	2SC2458
	Q551, 552	TRANSISTOR	2SC2235
	Q553, 554	TRANSISTOR	2SA965
	Q601, 602	TRANSISTOR	2SC2458
	Q603	TRANSISTOR	2SA1048
	Q604	TRANSISTOR	2SC2240
	Q605	TRANSISTOR	RN1203
	Q606	TRANSISTOR	RN1201
	D521–524	DIODE	HSS104–02
	D561	DIODE	HSS104–02
	D601	ZENER DIODE	HZS12AL
	D700	DIODE	S5566
	D701	DIODE	D3SBA20 (A)
	D703	ZENER DIODE	HZS12B2L
	D704	ZENER DIODE	HZS12AL
	D705	ZENER DIODE	HZS24–2L
	D706	ZENER DIODE	HZS6B2L
	D708–710	DIODE	HSS104–02

Mark	No.	Description	Parts No.
	D711	ZENER DIODE	HZS7B2L
	D712	ZENER DIODE	HZS6B2L
	D713	DIODE	S5566

RELAY

Mark	No.	Description	Parts No.
	RY561	RELAY	ASR–111

COILS

Mark	No.	Description	Parts No.
	F101	CERAMIC FILTER	ATF–119
	F102	CERAMIC FILTER	ATF–107
	F103	CERAMIC FILTER	ATF–208
	F104	FILTER	ATF1088
	L101	COIL	ATE1012
	L104	AXIAL INDUCTOR	LAU470K
	L106	AXIAL INDUCTOR	LAU2R2M
	L561, 562	COIL	ATH1009
	L701	FILTER	ATF–151
	L981–984	COIL	ATH–133

CAPACITORS

Mark	No.	Description	Parts No.
	C105	CERAMIC CAPACITOR	CKCYX473M16
	C106	AXIAL CERAMIC C.	CKPUYF223Z25
	C107	AXIAL CERAMIC C.	CCPUCH150J50
	C108	AXIAL CERAMIC C.	CKPUYF223Z25
	C109	ELECT. CAPACITOR	CEAS100M50
	C110	CERAMIC CAPACITOR	CKPUYY103N16
	C112, 113	CERAMIC CAPACITOR	CKPUYY103N16
	C115	CERAMIC CAPACITOR	CKDYX473M25
	C116	CERAMIC CAPACITOR	CKPUYB102K50
	C117	ELECT. CAPACITOR	CEAS3R3M50
	C118	CERAMIC CAPACITOR	CKPUYY103N16
	C119	ELECT. CAPACITOR	CEAS470M16
	C120	CERAMIC CAPACITOR	CKPUYX562M16
	C121	CERAMIC CAPACITOR	CKPUYY103N16
	C122	AXIAL CAPACITOR	CCPUSL470J50
	C123, 124	ELECT. CAPACITOR	CEAS2R2M50
	C125	ELECT. CAPACITOR	CEAS4R7M50
	C126	ELECT. CAPACITOR	CEAS100M50
	C128, 129	CERAMIC CAPACITOR	CKPUYY103N16
	C130, 131	ELECT. CAPACITOR	CEAS010M50
	C132	ELECT. CAPACITOR	CEASR33M50
	C133	CERAMIC CAPACITOR	CKCYB122K50
	C134, 135	CERAMIC CAPACITOR	CKCYB272K50
	C136, 137	ELECT. CAPACITOR	CEAS4R7M50
	C140, 141	CERAMIC CAPACITOR	CKCYB222K50
	C142	ELECT. CAPACITOR	CEAS470M16
	C145	CERAMIC CAPACITOR	CKPUYB221K50
	C146, 147	AXIAL CERAMIC C.	CCPUCH150J50
	C148	AUDIO FILM CAPACITOR	CFTXA224J50
	C149	AUDIO FILM CAPACITOR	CFTXA103J50
	C150	ELECT. CAPACITOR	CEAS330M16
	C151	AXIAL CERAMIC C.	CKPUYF223Z25
	C152	CERAMIC CAPACITOR	CKPUYY103N16

Mark	No.	Description	Parts No.
	C197	AXIAL CAPACITOR	CCPUSL330J50
	C198	CERAMIC CAPACITOR	CKMYB391K50
	C201	CERAMIC CAPACITOR	CKCYF473Z50
	C203–222	CERAMIC CAPACITOR	CKMYB391K50
	C223, 224	CERAMIC CAPACITOR	CKMYB821K50
	C225, 226	CERAMIC CAPACITOR	CKMYB681K50
	C231, 232	ELECT. CAPACITOR	CEAS100M50
	C233, 234	CERAMIC CAPACITOR	CCCSL221J50
	C235, 236	ELECT. CAPACITOR	CEAS470M10
	C237, 238	MYLAR FILM CAPACITOR	CQMA242J50
	C239, 240	MYLAR FILM CAPACITOR	CQMA822K50
	C241, 242	ELECT. CAPACITOR	CEAS2R2M50
	C243–246	AXIAL CERAMIC C.	CKPUYF103Z25
	C247, 248	CERAMIC CAPACITOR	CKCYB331K50
	C249	CERAMIC CAPACITOR	CKCYB471K50
	C251, 252	ELECT. CAPACITOR	CEAS2R2M50
	C253, 254	ELECT. CAPACITOR	CEAS4R7M50
	C501, 502	ELECT. CAPACITOR	CEAS2R2M50
	C503, 504	CERAMIC CAPACITOR	CKCYB102K50
	C505, 506	CERAMIC CAPACITOR	CKCYB681K50
	C520	ELECT. CAPACITOR	CEAS101M16
	C521, 522	ELECT. CAPACITOR	CEAS220M16
	C523, 524	CERAMIC CAPACITOR	CCCSL120K500
	C525, 526	CERAMIC CAPACITOR	CCCSL050C500
	C527, 528	CERAMIC CAPACITOR	CKMYB221K50
	C529	CERAMIC CAPACITOR	CKCYF103Z50
	C551–554	CERAMIC CAPACITOR	CCCSL101K500
	C561, 562	AUDIO FILM CAPACITOR	CFTXA473J50
	C601	ELECT. CAPACITOR	CEAS471M6
	C602	AXIAL CERAMIC C.	CKPUYF103Z25
	C603	ELECT. CAPACITOR	CEAS101M16
	C605	ELECT. CAPACITOR	CEAS4R7M50
	C701, 702	ELECT. CAPACITOR (5600/DC50V)	ACH1145
	C703	ELECT. CAPACITOR	CEAS101M16
	C704	ELECT. CAPACITOR	CEHAQ100M50
	C705	ELECT. CAPACITOR	CEAS101M25
	C706	ELECT. CAPACITOR	CEHAQ470M35
	C707	CAPACITOR (0.047/5.5)	ACH1135
⚠	C708	CKA (0.01/AC400V)	ACG1002
	C709	CKA (0.01/AC250V)	ACG1005
	C710	ELECT. CAPACITOR	CEHAQ470M10
	C981, 982	CERAMIC CAPACITOR	CKMYB681K50
	C983, 984	CERAMIC CAPACITOR	CKCYF103Z50
	C985, 986	CERAMIC CAPACITOR	CKMYB681K50
	C987, 988	CERAMIC CAPACITOR	CKCYF103Z50

RESISTORS

Mark	No.	Description	Parts No.
	R521, 522	CARBON FILM RESISTOR	RD1/4PM562J
	R523, 524	CARBON FILM RESISTOR	RD1/4PM104J

Mark	No.	Description	Parts No.
⚠	R527, 528	CARBON FILM RESISTOR	RD1/4PMF680J
⚠	R535, 536	FUSLIBLE RESISTOR	RFA1/4PS101J
⚠	R551−554	FUSLIBLE RESISTOR	RFA1/4PS101J
⚠	R555−558	CARBON FILM RESISTOR	RD1/4PMF101J
⚠	R561, 562	RESISTOR (0.33, 5W)	ACN1087
⚠	R563−566	CARBON FILM RESISTOR	RD1/4PMF100J
⚠	R600	METAL OXIDE RESISTOR	RS2LMF911J
	R609	CARBON FILM RESISTOR	RD1/4PM123J
	R701	CARBON FILM RESISTOR	RD1/4PM302J
⚠	R703	METAL OXIDE RESISTOR	RS1LMF392J
⚠	R705	METAL OXIDE RESISTOR	RS2LMF122J
⚠	R715	METAL OXIDE RESISTOR	RS1LMF151J
⚠	R721−723	METAL OXIDE RESISTOR	RS2LMF472J
⚠	R981, 982	CARBON FILM RESISTOR	RD1/2PMF101J
⚠	R985, 986	CARBON FILM RESISTOR	RD1/2PMF101J
⚠	R987, 988	CARBON FILM RESISTOR	RD1/4PMF100J
		Other resistors	RD1/8PM□□□J

OTHERS

Mark	No.	Description	Parts No.
		PIN JACK 6P (PHONO, CD, VCR/LD)	AKB1121
		PIN JACK 8P (TAPE1/DAT, TAPE2 MONITOR)	AKB1127
		TERMINAL 2−P (ANTENNA)	AKE−060
		SPEAKER TERMINAL 8−P	AKE−111
		CONNECTOR (PAL SOCKET)	AKX1001
	X101	CRYSTAL RESONATOR (456kHz)	ASS1066
	X102	CRYSTAL RESONATOR (7.2MHz)	ASS1005
		AM RF TUNING BLOCK	AXX1025
		4 SERIAL F.E. MODULE ASSEMBLY	AXQ1004

NOTE :
4 Serial F.E. module assembly has no service parts.

CONTROL ASSEMBLY

SEMICONDUCTORS

Mark	No.	Description	Parts No.
	IC301	OP−AMP IC	NJM4558DXP
	IC302	OP−AMP IC	NJM4558LD
	IC801	RECEIVER CONTROL	PDG049−B
	Q801	TRANSISTOR	RN1203

SWITCHES

Mark	No.	Description	Parts No.
	S801−830	SWITCH	ASG1034

CAPACITORS

Mark	No.	Description	Parts No.
	C300	ELECT. CAPACITOR	CEJA100M50
	C301, 302	ELECT. CAPACITOR	CEAS4R7M50
	C303, 304	CERAMIC CAPACITOR	CCCSL220J50
	C305, 306	CERAMIC CAPACITOR	CKCYB331K50
	C307	AXIAL CERAMIC C.	CKPUYF103Z25
	C309, 310	AUDIO FILM CAPACITOR	CFTXA153J50
	C311, 312	AUDIO FILM CAPACITOR	CFTXA823J50
	C313, 314	MYLAR FILM CAPACITOR	CQMA332K50
	C315, 316	AUDIO FILM CAPACITOR	CFTXA183J50
	C317	ELECT. CAPACITOR	CEJA2R2M50
	C318	ELECT. CAPACITOR	CEAS2R2M50
	C319, 320	CERAMIC CAPACITOR	CKCYB391K50
	C321, 322	CERAMIC CAPACITOR	CCCSL220J50
	C323, 324	CERAMIC CAPACITOR	CKCYB331K50
	C326	ELECT. CAPACITOR	CEAS470M25
	C327, 328	ELECT. CAPACITOR	CEAS220M16
	C333	ELECT. CAPACITOR	CEJA2R2M50
	C334	ELECT. CAPACITOR	CEAS2R2M50
	C335, 336	CERAMIC CAPACITOR	CKCYB391K50
	C801	ELECT. CAPACITOR	CEJA4R7M50
	C802	ELECT. CAPACITOR	CEJA0R1M50
	C803	ELECT. CAPACITOR	CEJA221M6
	C804	AXIAL CERAMIC C.	CKPUYF103Z25
	C805	AXIAL CERAMIC C.	CKPUYF473Z16
	C807, 808	CERAMIC CAPACITOR	CKCYX473M25
	C809	ELECT. CAPACITOR	CEJA100M50
	C810	AXIAL CERAMIC C.	CKPUYF103Z25
	C811, 814	AXIAL CERAMIC C.	CKPUYF473Z16

RESISTORS

Mark	No.	Description	Parts No.
	VR302	VR (500k− × 1)	ACS1016
	VR303, 304	VR (100k)	ACS1053
	VR361	VR (100k−A5 × 2)	ACT1071
		Other resistors	RD1/8PM□□□J

OTHERS

Mark	No.	Description	Parts No.
		FL SPACER	AEB1174
	V801	FL TUBE	AAV1090
	X801	CERAMIC OSCILLATOR (4.19MHz)	ASS1022

SP SWITCH ASSEMBLY

SWITCHES

Mark	No.	Description	Parts No.
⚠	S1	PUSH SWITCH	ASG1035
	S570	PUSH SWITCH	SUJ7LYXS

CAPACITORS

Mark	No.	Description	Parts No.
	C531, 532	CERAMIC CAPACITOR	CKCYB392K50
	C570	ELECT. CAPACITOR	CEAS010M50
⚠	C571	CKA (0.01/AC400V)	ACG1002

RESISTORS

Mark	No.	Description	Parts No.
⚠	R571, 572	METAL OXIDE RESISTOR	RS2LMF331J
⚠	R573, 574	METAL OXIDE RESISTOR	RS1PMF681J

OTHERS

Mark	No.	Description	Parts No.
		JACK (HEADPHONE)	AKN1002

5. ADJUSTMENTS

- For connections and points to be adjusted, refer to Fig. 5−1, Fig. 5−2 and Fig. 5−3.

5.1 AM TUNER ADJUSTMENT

- Set the BAND selector "AM".

Step No.	Adjustment Title	AM SG (400Hz 30% Mod.)		Reception Frequency Display	Adjustment Location	Specifications
		Frequency (kHz)	Level (dBμV)			
1	TUNED indicator sensitivity check	999	——	999kHz	R117	Check that the indicator lights up when the level is less than 64dBμV/m. *1

*1. Remove R117 if the indicator does not light up.

5.2 FM TUNER ADJUSTMENT

- Set the BAND selector to "FM".
- Perform VCO adjustment two minutes or more after turning the power ON.

Note :
Stereo modulation : Main 1kHz L+R ±68.25kHz dev.
Pilot 19kHz ±6.75kHz dev.

Step No.	Adjustment Title	FM SG (1kHz±75kHz dev.)		Reception Frequency Display	Adjustment Location	Specifications
		Frequency (MHz)	Level (dBμV)			
1	Detector coil T-meter adjustment	98.0	60	98.0MHz	L101	Adjust so that the DC voltage between both sides of R111 is 0±50mV.

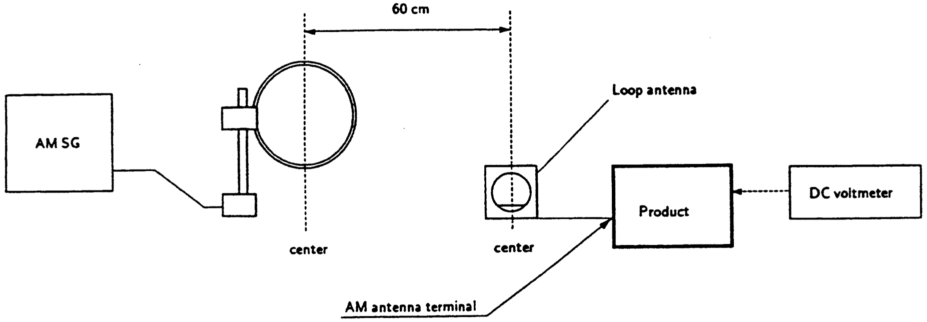

60 cm
AM SG
Loop antenna
Product
DC voltmeter
center
center
AM antenna terminal

Fig. 5−1 AM Adjustment Connection Diagram

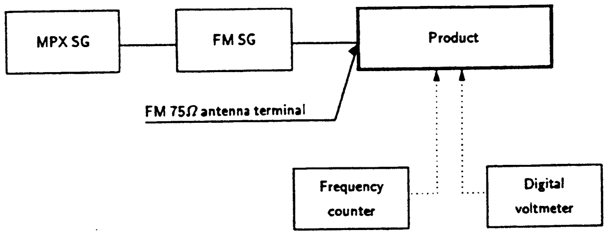

MPX SG
FM SG
Product
FM 75Ω antenna terminal
Frequency counter
Digital voltmeter

Fig. 5−2 FM Adjustment Connection Diagram

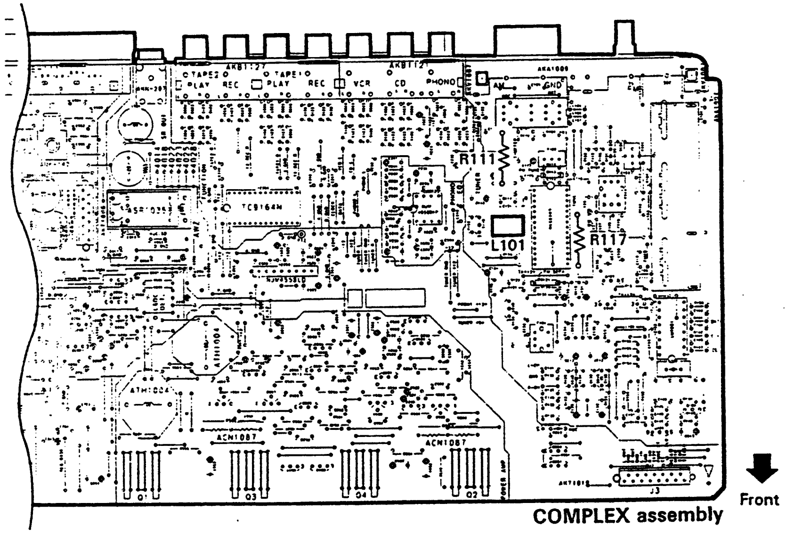

R111
L101
R117
Front
COMPLEX assembly

Fig. 5−3 Adjustment Points

5. REGLAGES

- Les raccordements et les points de réglages sont représentés à la Fig. 5–1, Fig. 5–2 et Fig. 5–3.

5.1 REGLAGE DU SYNTONISEUR AM

- Placer le sélecteur BAND sur la position "AM".

Etape No.	Items de réglage	AM SG (400Hz 30% Mod.)		Affichage de fréquence de réception	Liea de réglage	Caractéristiques
		Fréquence (kHz)	Niveau (dBμV)			
1	Contrôle de sensibilité de l'indicateur TUNED.	999	—	999kHz	R117	Vérifier que l'indicateur s'allume lorsque le niveau est inférieur à 64dBμV/m. ∗1

∗1 Déposer R117 si l'indicateur ne s'allume pas.

5.2 REGLAGE DU SYNTONISEUR FM

- Placer le sélecteur BAND sur la position "FM".
- Régler le VCO après deux minutes (ou plus) de mise sous tension.

Note :
Modulation stéréo : Principal 1kHz L+R ±68,25kHz dev.
Pilote 19kHz ±6,75kHz dev.

Etape No.	Items de réglage	FM SG (1kHz±75kHz dév.)		Affichage de fréquence de réception	Liea de réglage	Caractéristiques
		Fréquence (MHz)	Niveau (dBμV)			
1	Réglage de la bobine de détection	98,0	60	98,0MHz	L101	Régler de manière que la tension CC appliquée entre les deux côtés de R111 soit 0±50mV.

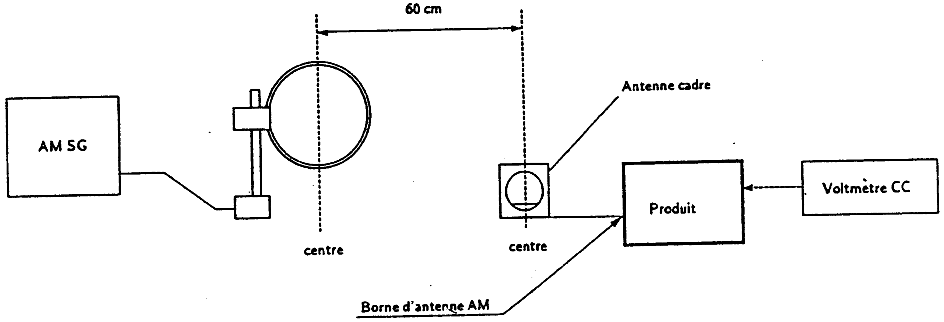

60 cm
AM SG
Antenne cadre
Produit
Voltmètre CC
centre
centre
Borne d'antenne AM

Fig. 5–1 Schéma de connexion de réglage AM

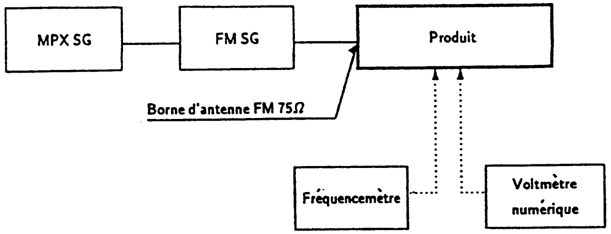

MPX SG
FM SG
Produit
Borne d'antenne FM 75Ω
Fréquencemètre
Voltmètre numérique

Fig. 5–2 Schéma de connexion de réglage FM

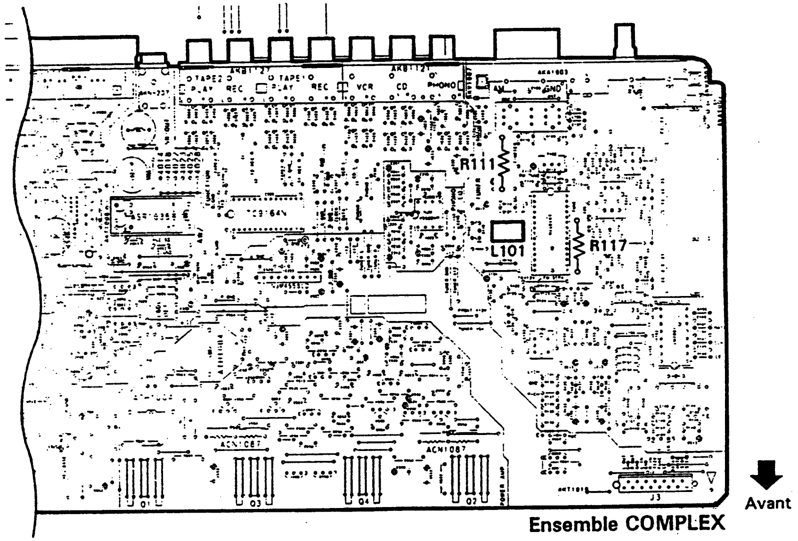

R111
L101
R117
Avant
Ensemble COMPLEX

Fig. 5–3 Enplacements de réglage

5. AJUSTES

- Para las conexiones y puntos de ajuste, refiérase a la Fig. 5−1, Fig. 5−2 y Fig. 5−3.

5.1 AJUSTE DE LA SECCION DEL SINTONIZADOR DE AM

- Ajuste el selector BAND a la posición "AM".

Nº de paso	Items de ajuste	AM SG (400Hz 30% Mod.)		Fresuenci metro de recepción	Lugar de Ajuste	Especificaciones
		Frecuencia (kHz)	Nivel (dBμV/m)			
1	Comprobación de la sensibilidad del indicador TUNED.	999	—	999kHz	R117	Compruebe que se encienda el indicador cuando el nivel es de menos de 64dBμV/m. ∗1

∗1 Extraiga el R117 si no se enciende el indicador.

5.2 AJUSTE DE LA SECCION DEL SINTONIZADOR DE FM

- Ajuste el selector BAND a la posición "FM".
- Realice el ajuste VCO dos minutos o más después de conectar la alimentación.

Nota :
Modulación estéreo : Principal 1kHz L+R ±68,25kHz dev.
Pilot 19kHz ±6,75kHz dev.

Nº de paso	Items de ajuste	FM SG (1kHz±75kHz dev.)		Fresuenci metro de recepción	Lugar de Ajuste	Especificaciones
		Frecuencia (MHz)	Nivel (dBμV)			
1	Ajuste del medidor T de la bobina detectora	98,0	60	98,0MHz	L101	Ajuste de modo que la tensión de CC entre ambos lados de R111 sea de 0±50mV.

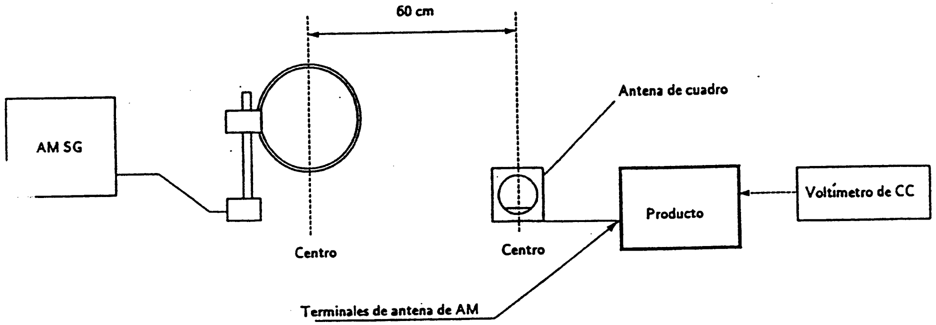

60 cm
AM SG
Antena de cuadro
Producto
Voltímetro de CC
Centro
Centro
Terminales de antena de AM

Fig. 5−1 Diagrama de conexiones para el ajuste de AM

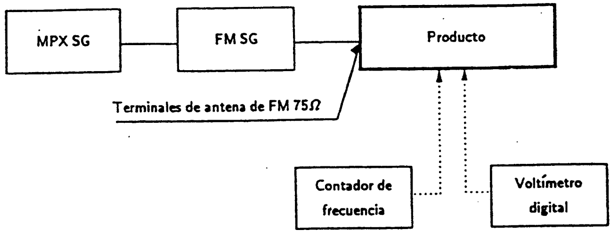

MPX SG
FM SG
Producto
Terminales de antena de FM 75Ω
Contador de frecuencia
Voltímetro digital

Fig. 5−2 Diagrama de conexiones para el ajuste de FM

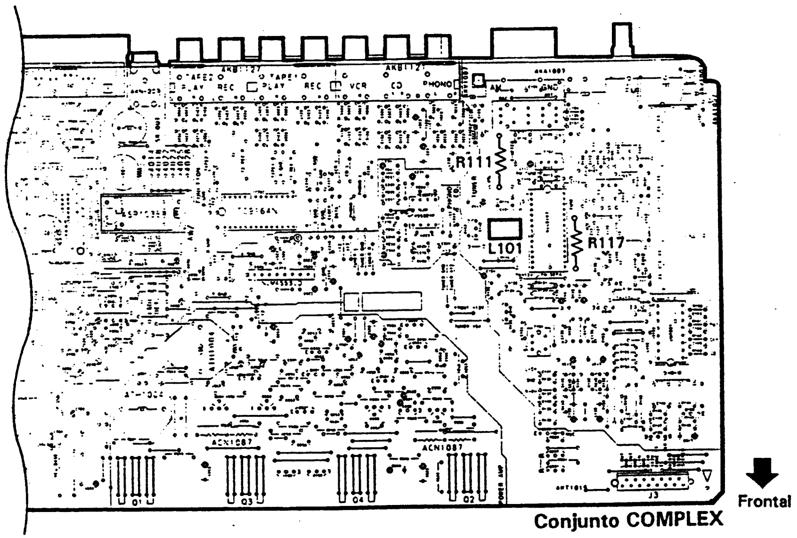

R111
L101
R117
J3
Frontal
Conjunto COMPLEX

Fig. 5−3 Puntos de ajuste

6. FOR SX – 221R/HE, HB, YPW, SX – 121/HE AND HB TYPES

NOTES:

- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

6.1 FOR SX – 221R/HE, HB AND YPW

Contrast of Miscellaneous Parts

SX – 221R/HE, HB, YPW and SX – 221R/HEWZ have the same construction except for the following :

Mark	Symbol & Description	Part No.				Remarks
		SX – 221R/ HEWZ	SX – 221R/ HE	SX – 221R/ HB	SX – 221R/ YPW	
◉	COMPLEX assembly	AWZ4083	AWZ4088	AWZ4088	AWZ4088	
NSP	SP SWITCH assembly	AWZ4086	AWZ4089	AWZ4089	AWZ4089	
NSP	VR assembly	AWZ4087	AWZ4090	AWZ4090	AWZ4090	
⚠	AC Power cord	ADG1021	ADG1021	ADG1085	ADG – 064	
	FL Filter	AAK2309	AAK2309	AAK2309	AAK2329	
	Operating instructions (German)	ARC1349	···············	···············	···············	
	Operating instructions (English, French, German, Italian, Dutch, Swedish, Spanish, Portuguese)	···············	ARE1239	···············	···············	
	Operating instructions (English)	···············	···············	ARB1369	ARB1369	

SP SWITCH ASSEMBLY

SP SWITCH assembly (AWZ4089) and SP SWITCH assembly (AWZ4086) have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		AWZ4086	AWZ4089	
	C531, C532	CKCYB392K50	···················	
⚠	R573, R574	RS1PMF681J	···················	

VR ASSEMBLY

VR assembly (AWZ4090) and VR assembly (AWZ4087) have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		AWZ4087	AWZ4090	
	C365	CKCYF473Z50	···················	

COMPLEX ASSEMBLY

COMPLEX assembly (AWZ4088) and COMPLEX assembly (AWZ4083) have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		AWZ4083	AWZ4088	
	Q107	2SC2458	···················	
	F104	ATF1088	···················	
	L561, L562	ATH1009	ATH1004	
	L701	ATF – 151	···················	
	L981 – L984	ATH – 133	···················	
	C123	CEAS2R2M50	CEAS010M50	
	C124	CEAS2R2M50	···················	
	C133	CKCYB122K50	···················	
	C134, C135	CKCYB272K50	CKCYB822K50	
	C140, C141	CKCYB222K50	···················	
	C197	CCPUSL330J50	···················	
	C198, C203 – C222	CKMYB391K50	···················	
	C223, C224	CKMYB821K50	CKMYB471K50	
	C225, C226, C981, C982, C985	CKMYB681K50	···················	
	C986	CKMYB681K50	···················	
	C527, C528	CKMYB221K50	···················	
	C561, C562	CFTXA473J50	CFTXA104J50	
	C563, C564	···················	CFTXA104J50	
	C983, C984, C987, C988	CKCYF103Z50	···················	
	R114	RD1/8PM563J	RD1/8PM433J	
	R115	RD1/8PM822J	RD1/8PM472J	
	R116	···················	RD1/8PM153J	
	R122	RD1/8PM224J	···················	
	R123	RD1/8PM222J	···················	
	R124	RD1/8PM392J	···················	
	R125	RD1/8PM152J	···················	
	R126	RD1/8PM473J	···················	
	R127, R128	RD1/8PM153J	RD1/8PM103J	
	R135, R136	RD1/8PM102J	···················	
	R180	RD1/8PM123J	···················	
⚠	R981, R982, R985, R986	RD1/2PMF101J	···················	
⚠	R987, R988	RD1/4PMF100J	···················	
	4 Serial F.E. module assembly	AXQ1004	···················	∗1
	2 Serial F.E. module assembly	···················	AXQ1002	∗1

∗1 All of these assemblies has no service parts.

6.2 FOR SX-121/HE AND HB

Contrast of Miscellaneous Parts

SX-121/HE, HB and SX-121/HEWZ have the same construction except for the following :

Mark	Symbol & Description	Part No.			Remarks
		SX-121/HEWZ	SX-121/HE	SX-121/HB	
◉	COMPLEX assembly	AWZ4091	AWZ4095	AWZ4095	
NSP	SP SWITCH assembly	AWZ4094	AWZ4096	AWZ4096	
⚠	AC Power cord	ADG1021	ADG1021	ADG1085	
	Operating instructions (German)	ARC1349	....	....	
	Operating instructions (English, French, German, Italian, Dutch, Swedish, Spanish, Portuguese)	....	ARE1239	....	
	Operating instructions (English)	....	....	ARB1369	

SP SWITCH ASSEMBLY

SP SWITCH assembly (AWZ4096) and SP SWITCH assembly (AWZ4094) have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		AWZ4094	AWZ4096	
	C531, C532	CKCYB392K50	....	
⚠	R573, R574	RS1PMF681J	....	

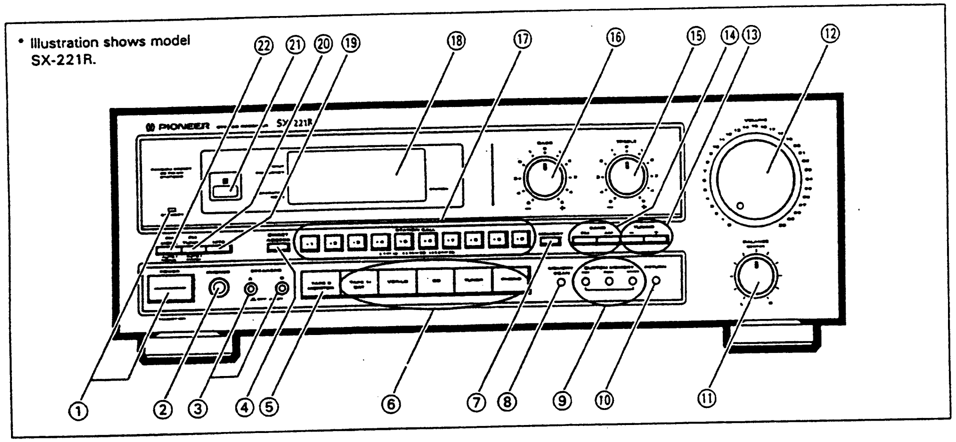
COMPLEX ASSEMBLY

COMPLEX assembly (AWZ4095) and COMPLEX assembly (AWZ4091) have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		AWZ4091	AWZ4095	
	Q107	2SC2458	....	
	F104	ATF1088	....	
	L561, L562	ATH1009	ATH1004	
	L701	ATF-151	....	
	L981–L984	ATH-133	....	
	C123	CEAS2R2M50	CEAS010M50	
	C124	CEAS2R2M50	....	
	C133	CKCYB122K50	....	
	C134, C135	CKCYB272K50	CKCYB822K50	
	C140, C141	CKCYB222K50	....	
	C197	CCPUSL330J50	....	
	C198, C203–C222	CKMYB391K50	....	
	C223, C224	CKMYB821K50	CKMYB471K50	
	C225, C226, C981, C982, C985, C986	CKMYB681K50	....	
	C527, C528	CKMYB221K50	....	
	C561, C562	CFTXA473J50	CFTXA104J50	
	C563, C564	....	CFTXA104J50	
	C983, C984, C987, C988	CKCYF103Z50	....	
	R114	RD1/8PM563J	RD1/8PM433J	
	R115	RD1/8PM822J	RD1/8PM472J	
	R116	....	RD1/8PM153J	
	R122	RD1/8PM224J	....	
	R123	RD1/8PM222J	....	
	R124	RD1/8PM392J	....	
	R125	RD1/8PM152J	....	
	R126	RD1/8PM473J	....	
	R127, R128	RD1/8PM153J	RD1/8PM103J	
	R135, R136	RD1/8PM102J	....	
	R180	RD1/8PM123J	....	
⚠	R981, R982, R985, R986	RD1/2PMF101J	....	
⚠	R987, R988	RD1/4PMF100J	....	
	4 Serial F.E. module assembly	AXQ1004	....	*1
	2 Serial F.E. module assembly	....	AXQ1002	*1

**1 All of these assemblies has no service parts.*

7. PANEL FACILITIES



• Illustration shows model SX-221R.

[SX-221R]

① POWER (STANDBY/ON) switch/STANDBY indicator

This is the switch for electric power.

ON:	When set to the ON position, power is supplied and the unit becomes operational.
STANDBY:	When set to the STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness. When the STANDBY indicator lights, the unit is in STANDBY and goes out during ON.

- When not using the unit for a long period, disconnect the power cord.

[SX-121]

① POWER switch

When this switch is pressed, power is supplied to the unit.
Press the switch again to turn power OFF.

[Timer ON/OFF possible]
When the unit is switched ON, ON/OFF control can be performed by means of the optional timer.

NOTE (SX-121, SX-221R):
When the power is initially turned ON, muting will be applied to prevent sound from being output for about 5 seconds.

② PHONES jack

Connect the plug on your headphones to this jack. To listen to a program only through the headphones, set both SPEAKERS A and B buttons to the OFF position.

③ SPEAKERS buttons (▙ OFF, ▂ ON)

These are used to select the speaker through which you [illegible] to listen.
A: When the speakers connected to A terminals are in [illegible]
B: When the speakers connected to B terminals are in use.

- Turn both A and B speakers to the OFF position when only headphones are in use.

NOTE:
No sound will be heard through the speakers when both A and B buttons are depressed if only one set of speakers has been connected to either A or B SPEAKERS terminals.

④ DIRECT ACCESS tuning button

When this button is pressed, the STATION CALL buttons function as 10-key number buttons for direct input of the desired reception frequency. Press again to cancel this mode.
If the input station falls outside of the receiver's tuning range, the display section will display a message: "UPPER" if the frequency is too high and "LOWER" if it is too low.

⑤ TAPE 2 MONITOR button

Switch on when using a cassette deck connected to the TAPE 2 MONITOR jacks.

⑥ Input selector buttons

Use to select playback source.
[TAPE 1/DAT] — Press when listening to tape playback with the cassette deck 1 or digital audio tape deck.
[VCR/LD] — Press when listening to programs from a component connected to the VCR/LD terminals.
[CD] — Press when listening to compact disc playback on a CD player.
[TUNER] — Press when listening to AM or FM broadcasts.
[PHONO] — Press when listening to record playback on a turntable.

⑦ MEMORY button

When the unit is in the frequency display mode, pressing this button will result in the memorization of the current broadcast band, reception frequency, and FM AUTO/MONO mode.
This button is also used to input custom memory names.

⑧ MEMORY SCAN button

This button is used for station memory scan and custom memory scan.

⑨ CUSTOM MEMORY buttons

Stations can be assigned to STATION CALL buttons according to the genre of material broadcast (POP, ROCK, OTHER). You can recall a particular genre, and scan all the stations of that genre with Memory Scan until you reach the desired one.

⑩ RETURN button

This is helpful during troubleshooting or when no sound is output. Pressing this button returns the receiver to the following settings, the sound level being controlled by VOLUME control.

• TAPE 2 MONITOR	OFF
• FUNCTION	TUNER
• BAND	FM*

* The last FM broadcast you were listening to will be received. When reception is not possible, search begins for a frequency that can be received.

NOTE:
If no sound is output after the RETURN button is pressed make sure that SPEAKERS switches are turned ON.

⑪ BALANCE control

Should normally be left in the center position. Adjust balance if the sound is louder from one of the speakers. If the right side is louder, turn toward the L position and if the left side is louder, turn toward the R position.

⑫ VOLUME control

Use to adjust volume level.

⑬ TUNING buttons (+ −)

+: The FM or AM band is scanned in the direction of increasing frequency.
−: The opposite operation to that of the + button takes place.

⑭ BAND buttons

These buttons are used to select either FM or AM reception.
FM: Push this button for FM reception.
AM: Push this button for AM reception.

⑮ TREBLE tone control

Use to adjust high-frequency tone. The center position is the flat (normal) position. When turned to the right, high-frequency tones are emphasized; when turned to the left, high-frequency tones are de-emphasized.

⑯ BASS tone control

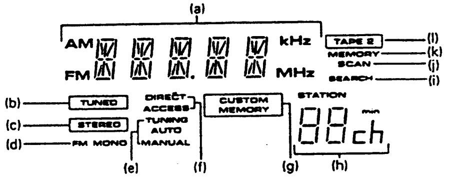
Use to adjust the low-frequency tone. The center position is the flat (normal) position. When turned to the right, low-frequency tones are emphasized; when turned to the left, low-frequency tones are de-emphasized.

⑰ STATION CALL buttons

These buttons are used to preset and recall desired broadcasting stations.

⑱ OPERATION DISPLAY panel

(a) Indicates the function or frequency by the function switches.
(b) TUNED indicator
(c) FM STEREO indicator
(d) FM MONO indicator
(e) TUNING AUTO/MANUAL indicator
(f) DIRECT ACCESS tuning indicator
(g) CUSTOM MEMORY indicator
(h) Indicates channel, STATION CALL number or sleep time.
(i) SEARCH indicator
(j) SCAN indicator
(k) MEMORY indicator
(l) TAPE 2 monitor indicator.



⑲ HITS (Hyper Intelligent Tuning System) button

Press this button to automatically search for and tune in broadcasts that can be received.

⑳ FM TUNING AUTO/MANU button

Works during FM reception.
Use this button to select either the AUTO mode or the MANUAL mode.
When the "AUTO" indicator is lit, the receiver is in the AUTO mode

㉑ Remote sensor window (SX-221R only)

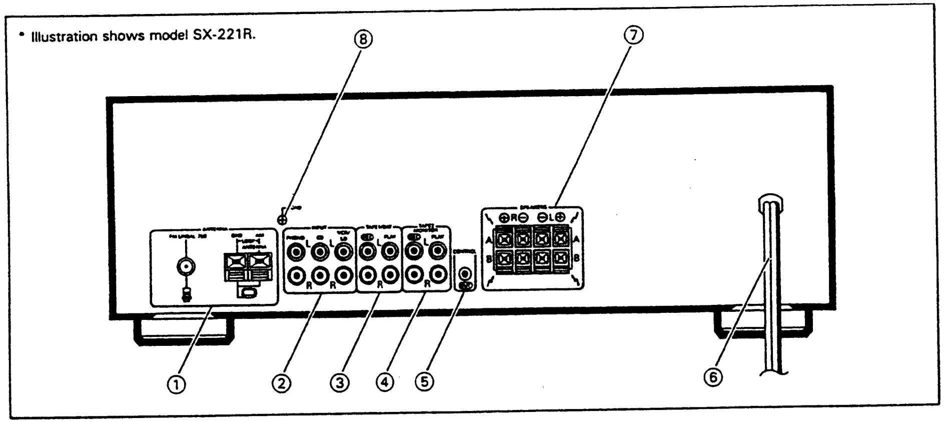
㉒ FM MODE AUTO/MONO selector button

Use to select the auto stereo mode or monaural mode when listening to FM broadcasts. The monaural mode has been selected when the FM MONO indicator is lit.

Auto stereo mode:
Normally leave in this mode for reception. When a stereo FM broadcast is received, it will be automatically reproduced in stereo sound.

Monaural mode:
When receiving distant stations or stations with weak broadcast signals, the input signal may be weak, thus resulting in increased noise during FM stereo broadcasts. In this event, setting the receiver to the monaural mode will reduce the noise, however, FM stereo broadcasts will be then reproduced in monaural sound.

NOTE:
This button has no effect on reception of AM broadcasts.



• Illustration shows model SX-221R.

① FM/AM ANTENNA terminals

Use these antenna terminals for receiving FM and AM broadcasts.

② INPUT jacks

PHONO	Connect to the output cables from a turntable.
CD	Connect to the output jacks of a compact disc player.
VCR/LD	Connect to the output jacks of a video cassette recorder or Laser Disc player.

③ TAPE 1/DAT jacks

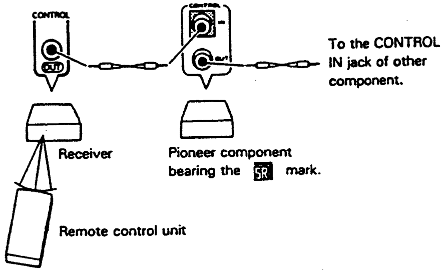
Connect these jacks to the cassette deck or digital audio tape deck.

④ TAPE 2 MONITOR jacks

Connect these jacks to the cassette deck.

⑤ CONTROL OUT jack (SX-221R only)

Connect this jack to other Pioneer components bearing the SR mark when using the remote control of this unit to control the other components.


CONTROL
OUT
CONTROL
IN
OUT
To the CONTROL IN jack of other component.
Receiver
Pioneer component bearing the SR mark.
Remote control unit

⑥ Power cord

⑦ SPEAKERS terminals

A: Connect to a first set of speakers.
B: Connect to a second set of speakers.

NOTE:
No sound will be heard through the speakers when both A and B buttons are depressed if only one set of speakers has been connected to either A or B SPEAKERS terminals.

⑧ GND terminal

Connect to the ground lead of a turntable.
Use a screwdriver to connect with the ground terminal.